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## II -- Nickel Steels

NICKEL is an alloy which goes into solution in steel (ferrite) and has not only the effect of imparting greater strength but also improves the ductility of any heat-treated part, either by annealing, normalizing or quenching and drawing. Nickel steels have proved their dependability in wide applications over a number of years.

Nickel steels fall in the S. A. E. 2xxx classification. The most widely used nickel steels contain from 3.25 to 3.75 per cent nickel. Other nickel steels, given in the order of their relative popularity, are those containing 5.00 per cent, 1.50 per cent and 0.50 per cent nickel.

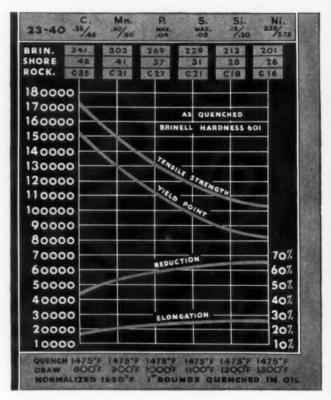
Nickel steels are used in parts where high strength, as measured by yield point, elastic limit, tensile strength and Brinell hardness, must be combined with high ductility and resistance to shock. To realize the maximum combination of properties nickel steels, like all other alloy steels, must be heat-treated.

With a low carbon content (up to 0.25 per cent) the widely used 23xx Series finds application, in the carburized and heat-treated condition, for king pins, rock-drill parts, air-hammer parts, collets, leveler rods, piston pins, universal joints, shackle bolts, spline shafts, rocker arms, gears of all types, countershafts and studs.

As their carbon content increases, the 23xx steels have wide general industrial uses. In the 0.35 to 0.45 carbon range they are used, in both the water- and oil-hardened condition, for heavy-duty shafts, stud shafts, set screws, studs, bolts, steering knuckles, drive shafts, airplane crankshafts, rocker arms, engine bolts and studs, connecting rods.

With higher carbon—0.45 to 0.55 per cent—the 23xx Series becomes oil-hardening, and is used generally for parts requiring exceptional strength, such as heavy-duty gears, pinions, shafts, axles, spindles.

The 25xx steels, containing 5.00 per cent nickel, are carburizing steels. They combine excellent wearing surface with an extremely strong, ductile and shock-resisting core. They are useful for unusually heavy-service parts, such as truck and bus gears, spline shafts, piston pins, countershafts, drive gears, airplane-engine parts. In the heat-treated condition, without carburization, the toughness of these steels lends them to such applications as piston pins for hammers and turbine blading.



\* Physical properties of S. A. E. 23-40, a reliable and popular nickel steel.

Nickel steels containing 0.50 and 1.50 per cent nickel (20xx and 21xx) are ordinarily used, in the lower carbon ranges, for carburized parts; they possess greater toughness than carbon steels under parallel conditions, being used extensively for service gears. They are used also, without carburizing, for such parts as engine bolts, staybolts and rivets, and for locomotive spring-rigging.

For highly stressed and reciprocating parts of locomotives nickel steel of the following composition is rapidly coming into use: carbon, 0.20 to 0.30 per cent; manganese, 0.75 to 0.95 per cent; silicon, 0.15 to 0.30 per cent; nickel, 2.50 to 3.00 per cent. This steel is usually put in service in the normalized and annealed condition; but in the case of locomotive axles some railroads quench and draw.



#### BETHLEHEM STEEL COMPANY

GENERAL OFFICES: BETHLEHEM, PA.

## THE IRON AGE

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Vol. 135, No. 19

## A Lesson from Toledo

VER since the enactment of the recovery act organized labor has tried to capitalize popular sympathy for the working masses. Posing as the one and only true spokesman for those who toil for a wage, the American Federation of Labor has been loud in its demands for labor's rights.

What, in brief, are the rights on which it has insisted? First, the right to select representatives of one's own choosing without interference or coercion. Second, the right of collective bargaining.

And what does the record show? It shows that the Federation will tolerate no choice of employee representatives outside of union ranks. It shows that it will accept no form of collective bargaining that is not coupled up with the closed shop.

Last year organized labor staged a violent strike at the Kohler Co. plant. It demanded an employee election and got it. The election, which was conducted under Government auspices, was unfavorable to the national union. Did the A. F. of L. accept this defeat gracefully? On the contrary, it protested the election. In other words, it will abide by elections only when it wins them.

Recently it called a strike at the Toledo plant of Chevrolet Motor Co. just two days before an election was due to be held under the auspices of the Automobile Labor Board. Did it fear defeat in the election? On the contrary, the results of primaries indicated that the A. F. of L. union would have a majority on the employees' bargaining committee. Why then the strike? Because organized labor is not interested in the workers' right to bargain. The word "bargaining" implies give and take. The A. F. of L. wants to dictate.

And in its quest for dictatorial power the federation is oblivious of the rights of others. By tying up a strategic plant it succeeded in stopping the flow of essential parts and thereby forced the suspension of operations at other plants. Employees in company units in no way concerned with the demands made on the management at Toledo were thrown out of employment. Employees of outside companies supplying materials and parts likewise were deprived of work. Stockholders of the organizations affected, many of them small investors, were threatened with loss or impairment of income. And, finally, industrial recovery was given a serious blow at a critical time.

A cold, calculating policy of riding rough shod over large disinterested groups is socially and economically indefensible. The strategy of launching attacks on managements whenever they are off their guard does not conform to American conceptions of fair play. To bludgeon employers into submission is not bargaining. To impose the closed shop is not identical with allowing employees freedom of choice in selecting representatives. To platitudinize about workers' rights is quite distinct from promoting the selfish ends of a private organization, greedy for dominance over both employees and employers.

G. L. LACHER
Managing Editor, The Iron Age

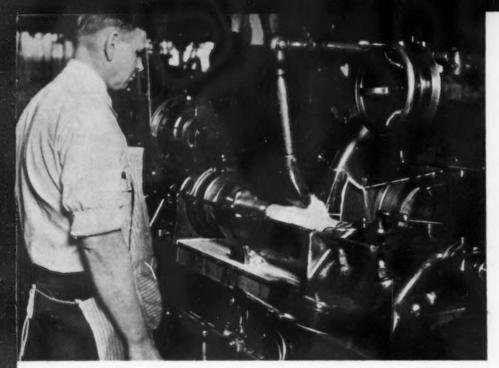


FIG. I—Rear axle housing tube mounted between centers in a hydraulic plain grinder for finishing several diameters. A 30-in. diameter 5-in. face wheel is employed.

## Automobile Require Accu

TO assure ready assembly of parts and interchangeability, precision grinding is relied upon extensively in automobile axle manufactur-

By FRED B. JACOBS



FROM a mechanical point of view, an automobile rear axle is a comparatively simple

mechanism consisting of two driving axles mounted on bearings between a differential gear, the differential gear case being driven usually by spiral bevel gears. The drive shaft carrying the bevel pinion is mounted on anti-friction bearings and the entire rear axle assembly and drive shaft enclosed in a dust-proof housing.

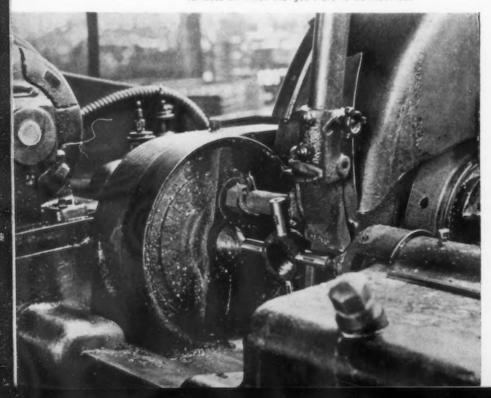
In the early days of the automotive industry, each maker of cars or trucks made his own axles, for in those days individual manu-

facturers took considerable pride in the fact that the entire product was made in one plant. With the development of the automotive industry it was natural that the work be specialized. Thus today the majority of axles are made in plants devoted exclusively to that product. Close competition between manufacturers together with the fact that the product must be made very accurately to assure ready assembly and interchangeability is responsible for the fact that precision grinding is relied on extensively in the average axle plant. This article illustrates and describes a few unusually interesting grinding operations at the plant of the Eaton Mfg. Co., Cleveland, where the product is truck and other heavy-duty axles exclusively.



Ordinary cylindrical precision grinding is employed, of course, for finishing a number of components, but as such operations are performed by well-known methods they need no special comment. In some instances, however, the usual practice is varied somewhat. For example, in Fig. 1 is shown a rear axle housing tube mounted between centers for finishing several diameters. The machine used is a

FIG. 3—Differential spider positioned for accurate finishing of the cylindrical surfaces on which the gears are to be mounted.



# Rear Axle Parts rate Grinding

ing. Grinding practices here described include some of the special set-ups at the plant of the Eaton Mfg. Co., Cleveland.



FIG. 2—Centerless grinding operation on drive axles. In this application the work is not fed through the wheels. The flange end of the axle runs in rollers on a special fixture, as shown.

Landis hydraulic plain grinder, capable of taking work 36 in. long and 10 in. in diameter, equipped with an alundum wheel 30-in, in diameter, 5-in. face, 46 grit, M5B grade. The wheel is operated at a surface speed of approximately 5500 ft. per min., while the work speed is 90 r.p.m. In this particular instance the surface being ground is 2% in. in diameter and 3% in. long. The advantage of a wide-face wheel on this job is apparent. The wheel face is greater than the width of the work, thus the entire length of the work is in process of grinding constantly. Again, due to the wide wheel a traverse feed can be employed. Thus the advantages of so-called plunge cut grinding are combined with the advantages of a traverse feed. This results in rapid production and is an excellent example of the utility of large wheels.

#### Centerless Grinding Employed

Centerless grinding is employed advantageously in a number of instances. Fig. 2 shows a drive axle mounted for grinding. In this operation the work is not fed through the wheels, but is held in one location and rotated by the action of the grinding and feed wheels as they are brought together. This machine is a Cin-

cinnati centerless grinder fitted with an alundum wheel 18 in. in diameter,  $4\frac{1}{2}$ -in. face, 46 grit, M grade, operated at a surface speed of 5000 ft. per min. The surface ground is 4 in. long and  $1\frac{3}{4}$  in. in diameter. As the illustration shows, the flange on the end of the axle runs in rollers on a special fixture. In this operation several hundred shafts can be ground one

after another with the assurance that the finished diameter will be within specified limits. It is necessary, of course, to set the wheels occasionally to compensate for wear and to true the wheels when they fail to cut properly or generate true surfaces. Such machines are fitted with special wheel-truing devices wherein a diamond tool is mounted on an accurate

FIG. 4—Grinding radial surface on back of heat-treated differential bevel gear.

The work locates in a special fixture on the work-head.

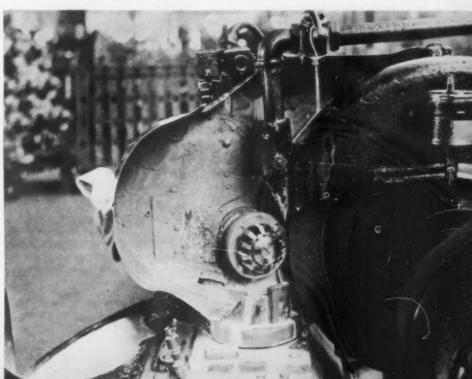




FIG. 5—Special fixture for inspecting each gear after radial grinding of the backs.

differential bevel gear. In this operation it is necessary to grind the radial surface so that there will be a definite relation between it and the gear pitch line. The machine used is a Norton cylindrical grinder, capable of taking work 12 in. in diameter and 36 in. long, fitted with an alundum wheel 20 in. in diameter, 1%-in. face, 100 grit, K6B grade. This wheel is operated at a surface speed of approximately 5500 ft. per min.

The work rotates at a speed of 50 r.p.m. It locates in a special fixture on the work-head, the locating points making contact at the pitch line. Thus each gear can be positioned exactly alike. The illustration shows this fixture plainly. The gear is held in place by a draw rod working through the headstock spindle. With the work located and rotated in this

slide so that it can be fed past the wheel to generate the necessary true surface demanded by close work.

The part shown in position for grinding in Fig. 3 is a differential spider and the object of grinding is to finish accurately the cylindrical surfaces on which the differential gears are located. The part is held between centers. Dogging of the work is not necessary as the drive pin on the grinder faceplate comes in contact with one of the arms. This machine is a Norton semi-automatic grinder, capable of accommodating work 12 in. in diameter and 18 in. long, fitted with an alundum wheel 36 in. in diameter, 21/2-in. face, 46 grit, M5B grade, operated at a surface speed of 6000 ft. per min. The work speed approximates 100 ft. per min. This is a plunge cut operation, as the work is fed directly to the wheel without traversing except for a slight traverse movement at the end of the cut to take out the wheel marks. The finished surfaces are % in. in diameter and 1% in. long.

On first thought it would appear that an abnormally large wheel is used for finishing a small job. Experience has shown, however, that large wheels are always more economical in the long run for several reasons. They operate for a longer period without truing. The larger the wheel, the greater its grinding

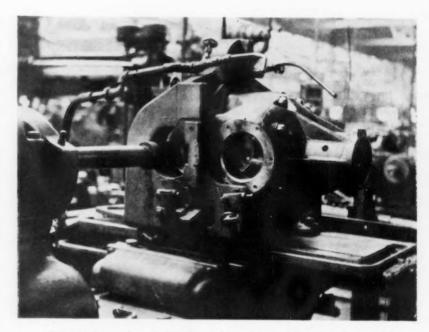


FIG. 7—Set-up for grinding four holes in 5-ton axle housing. A special fixture of simple box design is employed.

surface. Under these conditions, maximum production with a minimum of wheel wear is assured. Thus the added cost of large wheels is offset by their productive possibilities.

#### Radial Surface Ground on Back of Bevel Gear

The operation shown in Fig. 4 censists of grinding a radial surface on the back of a heat-treated

manner, the work-head is oscillated back and forth, which movement generates the necessary radius as the gear is brought in contact with the wheel. The oscillating work-head was designed by Eaton company engineers.

A special testing fixture used for inspecting each gear after it is ground is pictured in Fig. 5. The gear locates over a hardened and ground stud and in this position

the indicator plunger, fitted with an end to locate against the pitch line, is brought in contact. The plunger actuates the indicator dial so that it is a simple matter to set the indicator at zero on a sample gear kept for the purpose. Thus each gear tested will show any errors readily. It is essential to preserve accuracy in this operation, for if the radial portion is not ground correctly the gear would either bind or fit too loosely. By grinding the radial backs to predetermined limits of accuracy correct fitting in the assembly operation is assured.

In Fig. 6 the operation consists of grinding a surface 7.390 in. in diameter and ¼ in. wide on a ring gear. This is done before the ring gear is turned or cut, the object of grinding at this step in production being to generate a true

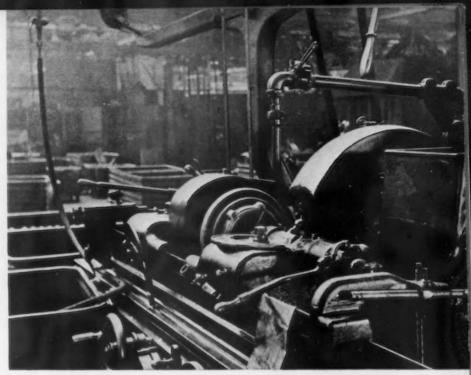


FIG. 6—Ring gears are ground before being turned or cut, the ground surface being used as a locating point in subsequent operations.

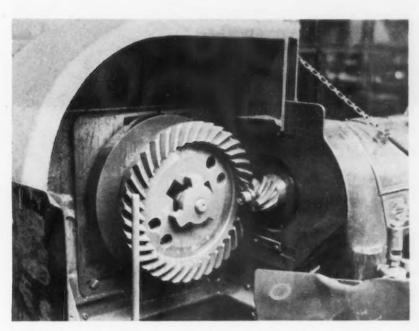


FIG. 8—Ring gear and pinion mounted for lapping. The lapping operation is completed in  $\frac{1}{2}$  to 1 min.

surface to be used as a locating point in subsequent operations. The gear is mounted on a special arbor and held between centers on a Norton cylindrical grinder, capable of taking work 14 in. in diameter and 72 in. long. The work speed in this operation is approximately 50 ft. per min. The wheel is alundum, 24 in. in diameter, 2½-in. face, 46 grit, M5B grade, and is operated at a surface speed of

5500 ft. per min. This operation serves as a good example of grinding done to assure accuracy of a locating surface.

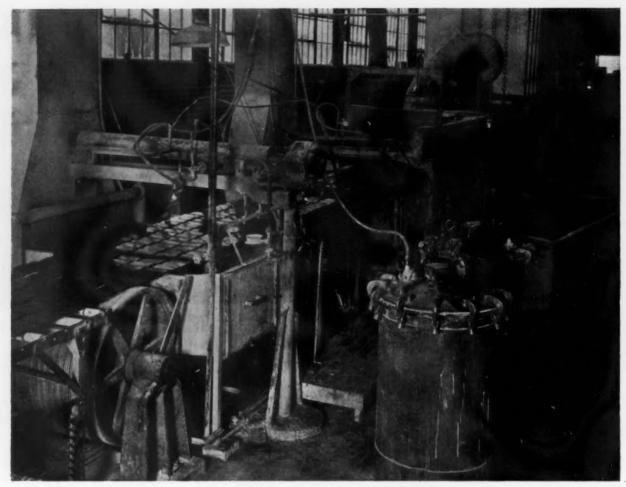
#### Special Fixture for Grinding Axle Housing Holes

Fig. 7 shows an axle housing for a 5-ton truck mounted in a special fixture for grinding two holes 4% in. in diameter and two holes 5% in. in diameter. Each ground hole is 2 in. deep. As the unit in question is for a multiple-speed axle with eight forward and two reverse speeds, it must be machined very accurately. The machine is a Heald planetary-type grinder, fitted with a crystolon wheel, 4 in. in diameter, 1½-in. face, 46 grit, medium soft grade, operated at a surface speed of 5000 ft. per min. The planetary motion of the wheel is about 60 r.p.m.

The special fixture for holding the work is bolted to the machine platen. By means of an indicator it is a simple matter to position the fixture accurately for the first hole when setting up the job. Then the dial graduations of the platen traverse screw are relied on to make the setting for the second hole. The question naturally arises: Why not bore these holes on a horizontal boring mill and dispense with grinding? The holes are rough bored by this method before grinding, but experience has shown that finishing by grinding preserves sizes very accurately and gives a better finish on the ground seats.

As the illustration shows, the fixture is of simple box design wherein the work is located by its flange against the back. It is held in place with clamps. This fixture, designed and built at the Eaton

(CONCLUDED ON PAGE 96)



TILE is automatically coated with porcelain enamel by a spray gun that travels back and forth at right angles to the rows of tile as they move on a continuous conveyor. This picture of a section of the conveyor line shows, at the left, the spraying equipment which applies the final coat, and the tile moving into the drying oven, at the right.

## Porcelain-Enameled Tile Made



ONE of the more recent new applications of steel as a substitute for other products is the

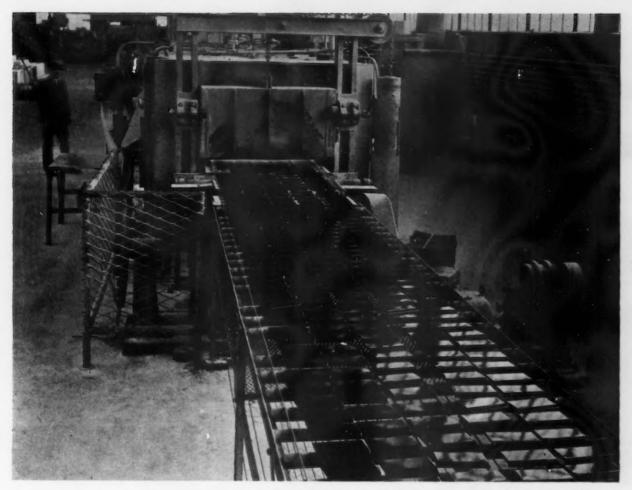
use of porcelain-enameled steel tile for bathroom and other wall finishes. This tile is made by the Youngstown Pressed Steel Co., Warren, Ohio, which has developed unique methods and equipment for handling these small tiles on a conveyor belt in continuous straightline production. The system as installed perhaps is more fully automatic than any that can be

found elsewhere in the porcelain enameling industry. The same equipment may be used for porcelain enameling of other small flat objects on a mass production basis.

Perhaps the most outstanding problem that had to be faced in the manufacture of porcelain-enameled tile was to devise production methods that would bring the cost down to a point that would permit the product to compete with clay tile as a wall finish. Automatic equipment for spraying the enamel, and other special auto-

matic devices were developed to permit the continuous movement of the work through the various production processes and with a capacity to produce the tile on a mass production basis.

All the work from making the blanks until the completed tiles are ready for packing is done on a single production line, 300 ft. long and occupying a narrow floor space along one side of one of the plant buildings. As the work moves on this line at a speed of 9 ft. per min., a formed tile is



TILE emerging from the burning furnace after the finish coat has been applied. While moving on the conveyor the tile becomes cool and then passes on to a rubber belt for packing.

## On a Mass Production Basis

enameled and ready for packing 12 min. after it is placed on the conveyor line. The conveyor is unique because of its automatic features. It consists of various belt conveyor sections, some composed of parallel strands of small cable, others of strands of fine wire on which the tile moves under the spray guns, and heat-resisting alloy chains which carry the work through the burning furnaces.

The conveyor sections are driven by several large drums around which two sets of conveyor strands By F. L. PRENTISS

Cleveland Resident Editor, The Iron Age

0 0 0

of different materials are wound, one drum serving as one of the driving units for the conveyor on either side. Each drum is so placed that the uppermost point of its circumference is on the same plane as the conveyor strands, and the tiles, as they pass over the top

of the drum, are picked up by the adjoining conveyor line. This arrangement of the conveyor sections and their drive produces in effect one continuous conveyor.

Improvements in enamels and in the technology of enameling have contributed their share to the manufacture of a high-quality porcelain-enameled product.

The tiles are made of 20-gage vitreous enameling sheet steel that comes from the mills in about (CONCLUDED ON PAGE 94)

THE IRON AGE, May 9, 1935-13



## Aluminum

of aluminum in work which corresponded to goldsmithery.

Statuettes of Aurora, Jupiter and Juno, Hercules and Omphale, Ariadne, Moliere, and others were cast in France between 1913 and 1925, but not until 1929 was there any appreciable increase in the amount or size of aluminum statuary. In that year two gigantic

ASTING the Navy and Marine Memorial at Washington in aluminum has centered the attention of the artistic world on aluminum statuary. Bronze, brass and lead have been the metals traditionally used for works of art, but little or nothing is known about aluminum as a statuary metal. Yet there are today more than 50 statues made of that metal.

The Navy and Marine Memorial, situated on an island in the Potomac River near the Arlington Memorial Bridge, will be dedicated on May 31. It is the largest aluminum statue yet erected. Begni del Piatta, the sculptor, chose aluminum as his material because of its resistance to weather, as well as for the ease with which it can be cast to produce fine detail and the multiplicity of distinct and characteristic finishes which can be

applied and blended for astistic harmony.

An outstanding example of the weathering quality is the aluminum cap of the Washington Monument. This cap, placed on the monument in 1884, was inspected last fall by the Bureau of Standards and was found to be in excellent condition after 50 years' exposure. Similarly, the statue of Eros, erected in 1893 in Piccadilly Circus, London, has given a satisfactory account of itself. It has never been cleaned.

The use of aluminum as a statuary casting material goes back to 1859 when M. Christofle, a French artist, used it in making statuettes. He varied his composition by alloying aluminum with copper or silver, and at the Dijon Exposition displayed a number of these castings. Christofle used about 100 kg.



14-THE IRON AGE, May 9, 1935

## Used for Casting Statuary

sphinxes were placed on top of the St. Louis Civil Court House, and an even larger finial was made for the Standard Oil Building in New York. A statue of Ceres, 31 ft. high, topped off the Chicago Board of Trade Building in 1930.

The aluminum statues which attracted most attention in the United States were the three fig-

ures which were placed in the lobby of Radio City Music Hall, New York, two years ago. Each is about 7 ft. high and each weighs about 500 lb.

Many of the aluminum statues mentioned were cast by the "lost wax" process. Considered by many as the oldest method of casting metal statuary, the "lost wax" process had been forgotten during the Dark Ages, but was revived by Benvenuto Cellini. There are two ways in which the "lost wax" process is used for statuary casting, depending upon the size of the finished figure. If it is to be a small object, which may be cast solid, a model is first made of wax. The late Alfred David Lenz, who brought the art of "lost wax" casting to a high degree of perfection, usually used colored wax, as this gave him a better opportunity to study shadows and symmetry.

After the model is completed, it is carefully covered with a refractory material. This procedure is (CONTINUED ON PAGE 102)

N the Navy and Marine Memorial, shown at the left, the wave is 32 ft. long and tapers from a 24 ft. width to 12 ft. width and a crest of the wave rises to a height of 12 ft. above the pedestal. The seven gulls which rise from the crest of the wave are 24 ft. above the pedestal. Five of the gulls have a wing spread of 6½ ft.

When casting a statue by the "lost wax" process, a plaster figure is first coated with a wax film about 1/6 in, thick, as shown at the left. Gates and channels are then added which lead to a large sprue in which the metal is poured. After a sufficient number of outlets have been added, the figure is encased with an outer covering of some refractory material, as shown in the next picture. It is then baked, allowing the wax to run out. Molten aluminum is then poured into the cast. The central figure at the bottom of page is Comiserazione, by M. Restelli, an Italian sculptor. St. Christopher, by de Lisi, at the extreme right, is in the lobby of the Central Post Office at Palermo, Sicily. It is 12 ft. high and weighs only 352 lb.







THE IRON AGE, May 9, 1935-15

## New High-Speed Die Casting



DIE casting is established as an important method of producing duplicate parts in fair

quantities. Increasing the rate of production is a constant activity within the industry. The Parker-White Metal & Machine Co., Erie, Pa., has designed and installed faster equipment for use in a considerable part of the company's current production of zinc alloy die castings.

Although these machines are well adapted to the making of die castings smaller than those constituting the average run of castings, their utility is not confined to castings of unusually small size. Rather, almost any part, weighing not over 1½ lb., and capable of being made in a die that does not measure much more than 10 x 15 x 10 in., can be produced readily; parts having abnormally complicated coring, which cannot be operated automatically to advantage, not included.

An important operating factor is machine ability to work not only at high speed, but automatically and substantially free from human variables, once jobs are set up and properly adjusted. The setting-up operation requires little time, as the die space is quite open and all parts of the machine that need adjustment are accessible. The operator may lubricate the die occasionally, but unless inserts are required, constant attendance is not needed on most jobs. The use of inserts slows the casting process somewhat. However, inserts are entirely feasible and are often employed, especially in the case of simple bushings, which are easily and quickly put in place. Fairly complex coring can be accomplished and extra slides are often used to clear the castings. For economical operation, the core actuating mechanisms need to be such as will lend themselves to automatic operation, without undue expense in reference to the total production

No description of the machine can be released at this time, beyond saying that it is plunger type, similar in general arrangement to the original Parker type machine, but adapted to operation at the high speeds. The machine is capable of exerting pressures up to 5000 lb. per sq. in. on metal forced into the dies. However, little advantage has been found to result by operating at pressures above 3000 lb. per sq. in. unless unusually thin sections are to be cast. Parts as thin as 0.018 in. have been die cast successfully at the 5000-lb. pressure. Casting at 1000 lb. and higher pressures, gives a denser and stronger casting than if 300 to 500 lb. were used, but very little improvement in physical properties has been found to result from pressures above 3000 lb.

To date, only zinc alloys have been used in the machine. Any of the standard zinc alloys can be used, but Zamak No. 3 is used almost exclusively at present.

In order to minimize iron pickup

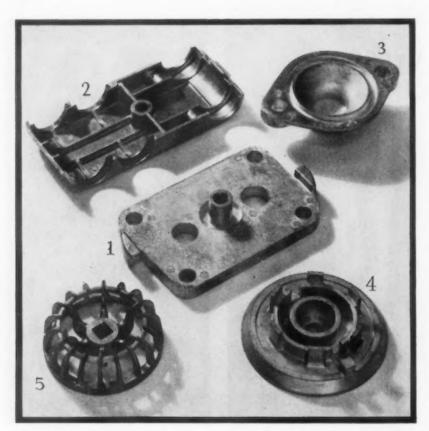


FIG. 1.—Five typical zinc-alloy die castings produced on the new high-speed machine referred to in the text. Pieces numbered 1, 3 and 4 are produced at the rate of about 3000 to 3200 per eight-hour day; piece No. 2 at 4000 per day and piece No. 5 of 5300 in eight hours, all from single cavity dies. The pieces vary in weight from about 3 to 12½ oz.

## Machines

## By HERBERT CHASE Consulting Engineer, New York

by the alloy, the machine is provided with a rather small metal pot. Melting is done in small supplementary pots beside the machine. From these the metal is ladled into the pot on the machine by hand. All pots are gas-fired and are provided with thermostatic controls which hold the metal temperature within a range of about 10 deg. F. An indicating pyrometer with hand control is used in the metal pot on the machine. Care is taken to hold the temperature very close to that at which the best results are secured with each particular die.

Use of a high-speed machine. capable of making a maximum of nearly 1000 shots an hour, gives not only a high production rate, but other advantages which should not be overlooked. On small parts, especially, even a much slower machine can be made to give a high gross output, providing a die with many cavities is employed. This is not always feasible and such a die is expensive and generally subject to some variation in the castings as between different cavities. With a high-speed machine, rapid production is possible even from a single-cavity die, although there are times when more than one cavity is advantageous. For a given production rate, fewer cavities are required in the case of the high speed machine and a single cavity is often ample to yield a production as good or better than can be had with several cavities in a machine of "normal" low speed. The net result is a marked advantage in die costs and in some production costs on the high-speed machine.

With this machine it is sometimes possible, because of the lower die cost, to die cast parts that could not be produced economically by this method if larger dies for slow-speed machines were required. It is not necessary to resort to unit dies for use in com-

bination holders, and it is possible to make a die of any desired dimensions within the limits of the machine.

When, as sometimes happens, two or more parts for a given diecast product are required, it is often possible to make a combination die in which all the parts are produced at each shot of the machine; but each case has to be considered on its merits.

Because of the small size, the dies usually employed are easy to handle and can be positioned and removed quickly. Simple dies can often be set up in about five minutes. The machine is designed for quick adjustment to dies of different thicknesses, and the locking pressure can be varied by the same adjustments.

With metal rapidly fed as in the case of this machine, water-cooled dies are required and flexible hose for circulating water through the dies is employed. There is automatic provision for knockouts.

Reference to the accompanying illustrations will serve to visualize



IG. 2.—Group of smaller die castings made at rates varying from about 4800 to 8400 in eight hours where single-cavity dies are used. These parts range in weight from 1/12 to 4 oz. The larger ones are made in single-cavity dies but the smaller ones are cast in dies having from three to eight cavities, all of which are filled at each shot of the machine. The smallest piece, No. 13, is made in an eight-cavity die with the machine running at 960 shots per hour, so that a total of 7500 individual gears per hour are produced

the capabilities of the machine. Fig. 1 is a flat cover for an airbrake element measuring approximately 3 x 5 x % in. thick and weighing about 12½ oz. The tubular projection in the center has a bronze bushing cast as an insert. Despite the fact that this bushing is positioned by hand, castings are made at the rate of about 3000 in eight hours.

The piece marked No. 2 is a small machine cover and has several ribs and bosses. It measures about 2½ x 5½ x ¾ in. with section thickness averaging 3/32 in. The weight is 7 oz. Production is 4000 per eight-hour day in a single-cavity die.

No. 3 casting is a simple flanged part with a domed recess and two %-in. cored holes. The weight is 71/2 oz. Outside dimensions are 23/4 x 4 x 1 in. Sections vary from 1/4 to about 1/2 in. in thickness. Approximately 3200 of these castings have been produced per day in a single-cavity die. The same rate is maintained in the case of the circular valve part marked No. 4. the flange of which is 31/4 in. in diameter. Section thickness runs from % to 3/32 in. Cores are concentric and the piece is not especially difficult to cast, but the rate is high for a piece of this weight.

Casting marked No. 5 is a valve wheel used in a locomotive stoker control mechanism. It is 2% in. in diameter by 1 in. high and has some sections less than 1/16 in. thick. Although the cores have many serrations they are rather simple as they are pulled parallel to the axis of the piece. About 5300 of these pieces have been cast in eight hr. This casting weighs only a little over 3 oz.

One of the most unusual castings is that marked No. 6 (Fig. 2) even though it is a simple shape. The bowl portion, which is cast separately from the base, so as to avoid a parting line on its surface, is 21/2 in. in diameter and only 0.018 in. thick. It was cast at a pressure of 5000 lb. per sq. in. The production in a singlecavity mold is 8400 in eight hr. The base is a separate casting and 7100 are cast in eight hr. in a single-cavity die. It is assembled to the bowl in a press by striking a portion of the base which projects slightly through the hole in the bowl where the sprue is cut off. The assembly weighs only 34 oz. and the bowl, which looks more like a stamping than a die casting, can be flexed easily with the fingers.

What is perhaps the most difficult casting shown, is that marked No. 7, which is a lock-housing weighing about 3 oz. This has intersecting cores, one of which is curved to the arc of a circle and has to be rocked into place and similarly withdrawn. Section thickness varies from about ½ in, at the thickest point to about 1/32 in, in the thin arc-shaped wall. The die is designed for automatic rocking of the core and a production rate of 4800 pieces in eight hr. is attained.

The dome-shaped casting, No. 8, is a simple piece weighing about 4 oz., but has to have an excellent finish as it is used as a pressure control knob on a clothes wringer and has to be nickel plated and polished. It is 2½ in, in diameter by 1½ in, high and is cast at the rate of 6400 in an eight-hr. day.

Casting No. 9 is a simple part for a cancellation stamp but the die requires a side slide to clear the lettering "F-R-O-N-T" on the cylindrical surface just below the flange. It weighs about 1% oz. and measures about 1% in. in both diameter and length. A production of 5000 castings in eight hr. from a single-cavity die has been maintained on this piece.

A three-cavity die is used to make the three parts for the handle and fastenings for a refrigerator vegetable tray marked No. 10. The handle itself weighs about 1 oz. and the two end attachments, which are cored and tapped as shown, weigh together slightly over 1 oz. The handle is 4 in. long and 3/16 in. thick. No less than 960 shots of the machine per hr. are made with this three-cavity die, or a total of 7200 handles and 14,400 end fittings in 8 hr., allowing for a few minutes of idle time.

The hex nut with tapered top, No. 11, is the stem cap for a faucet and is produced in a four-cavity die, without threads, at the rate of 750 shots per hr., or a total of 3000 pieces. These nuts are subsequently tapped, polished and plated. They weigh a little over ½ oz. each and measure about 1½ in. across the flats.

Bevel gears measuring 1 in. extreme diameter, as shown at No. 12, and weighing about 1 oz. each, are produced at the rate of 960 shots per hr. and the small spur

gear, marked 13, weighing about 1/12 oz. is made in an eight-cavity die running the same number of shots per hr. or a total of 7680 gears per hr. These gears are used in a small toy safe. They are 11/16 in. o.d., and have a 3/16 in. cored hole. They are ½ in. in axial thickness except that alternate teeth are only 1/16 in. thick.

#### Booklet Gives Murex Welding Electrode Data

OMPREHENSIVE data, covering Murex heavy mineral coated welding electrodes and considerable useful information for the designer and operator, are contained in an attractive 16-page booklet issued by the Metal & Thermit Corpn., 120 Broadway, New York. Illustrations include a variety of applications.

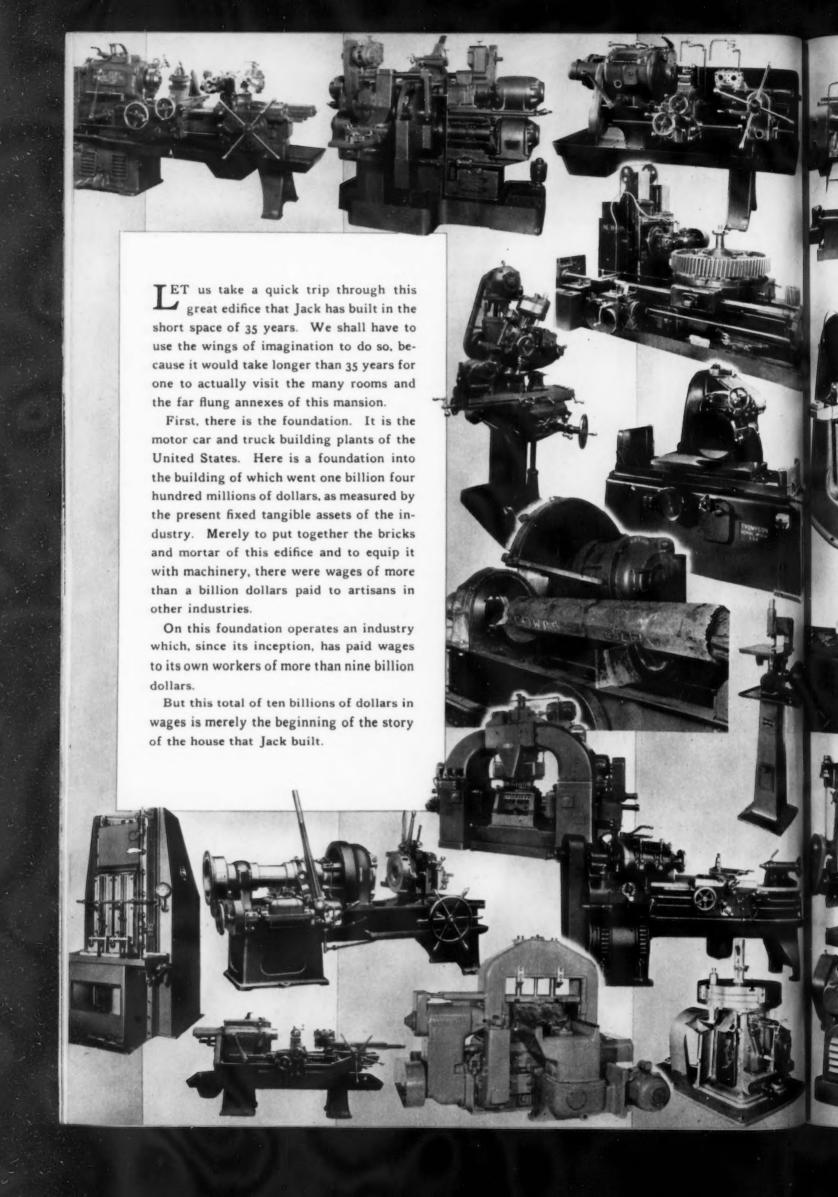
Features of these electrodes include a patented spiral winding of asbestos yarn, which is non-combustible and anchors the extruded coating to the core wire so that it does not crack off when the electrode is bent. The winding is also designed to assure uniform thickness of the coating and prevent wandering of the arc when welding. The Murex line comprises electrodes for flat welding, vertical and overhead welding and fillet welding of mild steel, for welding manganese and stainless steels, for hard surfacing and building up worn parts, and for welding Cor-Ten, Cromansil and a number of other new high-strength steels possessing heat and corrosion resistant properties.

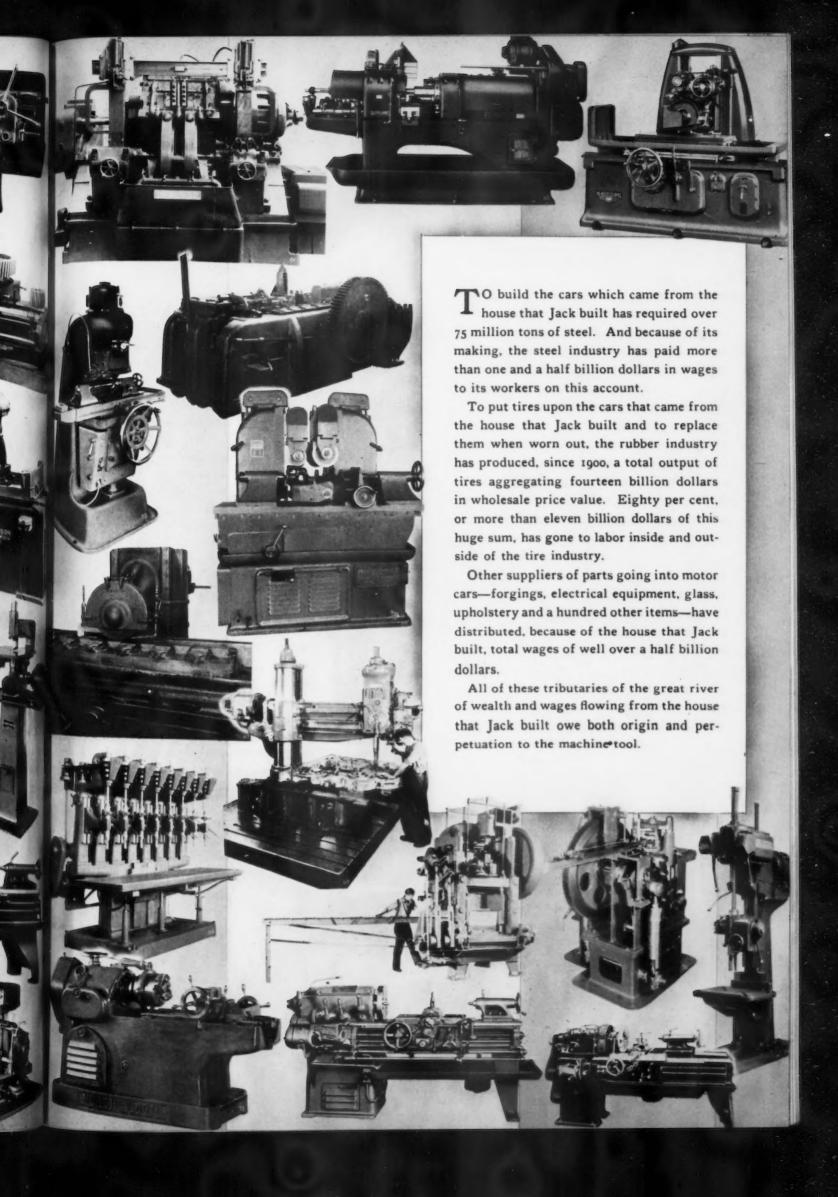
The Barrett Cravens Co., Chicago, manufacturer of lift trucks, portable elevators, trucks, etc.; the Bristol Co., Waterbury, Conn., manufacturer of recording, indicating and controlling instru-ments; the Cleveland Worm & Gear Co., Cleveland, manufacturer of worm gearing and worm gear speed reducers; the Fafnir Bearing Co., New Britain, Conn., manufacturer of ball bearings and bearing equipment; and the Scovill Mfg. Co., Waterbury, Conn., manufacturer of brass, bronze and allied metals and equipment, have become members of the Exhibitors Advisory Council, Inc., a cooperative service organization which issues data and information on industrial and trade shows located in New York.



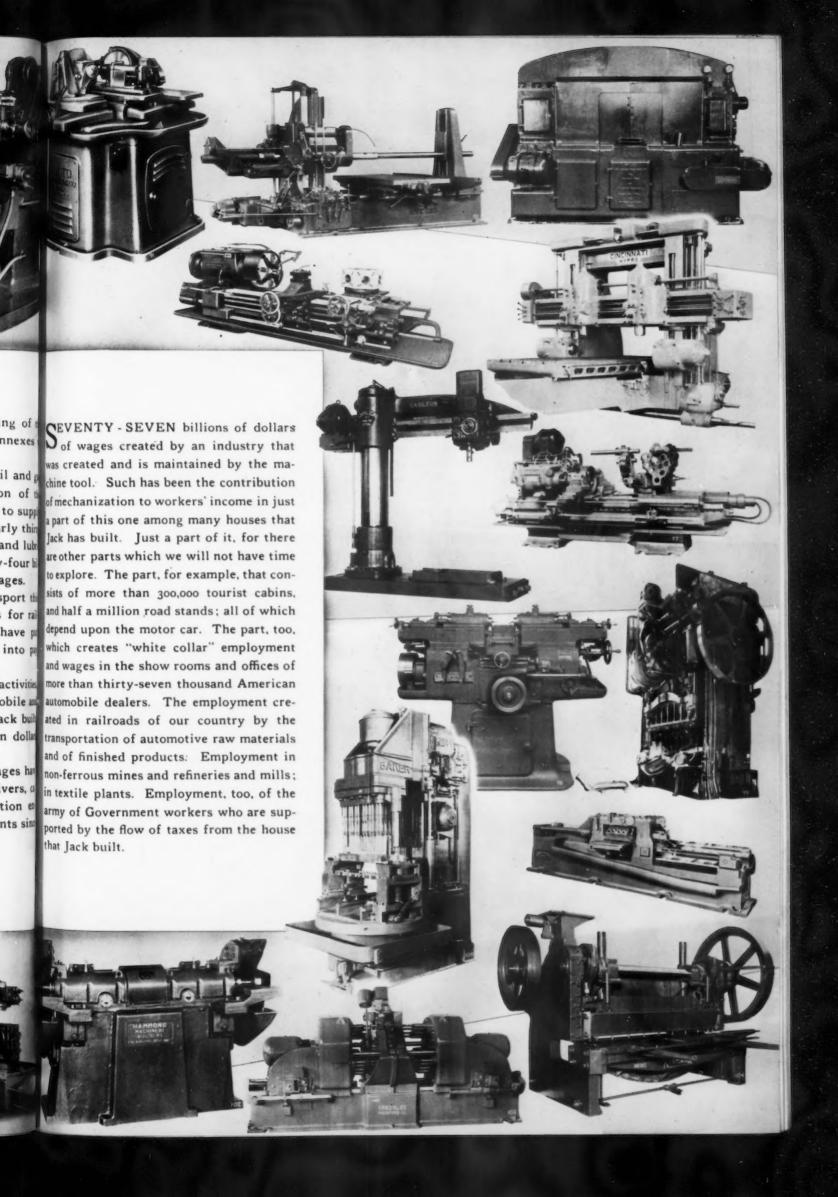






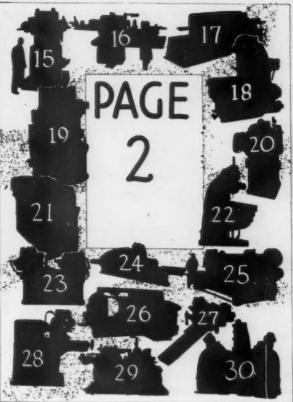












#### Key to Machines Pictured in Rotogravure Section

#### FIRST PAGE

1-Cincinnati Bickford Tool Co...... Super-Service upright drills

2-Monarch Machine Tool Co...... Magna-Matic all-electric automatic lathe

5-Gleason Works ...... Spiral bevel pinion rougher

6-Bullard Co. ...... Relay Contin-U-Matic

7-Landis Machine Co. . . . . . . . . . . . . Double-head Landmaco threading machine

8-Wickes Bros. ..... Surface broaching lathe

10-Cincinnati Milling Machine Co..... Automatic milling machine-No. 11/2

11-Ex-Cell-O Aircraft & Tool Corpn...... Precision boring machine for boring two transmission gears

12-Norton Co. ...... Cylindrical grinder, 6-in. type C, with hydraulic wheel feed

13-Ingersoll Milling Machine Co......Power Pack one-way, vertical multiple-spindle drill (rear view)

14-Barnes Drill Co. . . . . . . . . . Multiple-spindle hydraulic honing machine for all bores in V-8

motor block

#### SECOND PAGE

15-Henry & Wright Mfg. Co..... Dieing machine, 75 ton, with double roll feed

16-Warner & Swasey Co...... Turret lathe, high-speed, No. 2

18-Blanchard Machine Co...... Vertical surface grinder, high-power

19-Baird Machine Co...... Eight-spindle automatic internal grinder

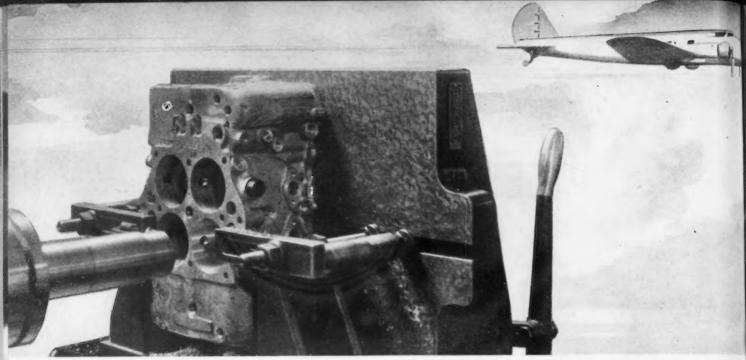
21-New Britain-Gridley Machine Co...... Six-spindle chucking machine

22-Kearney & Trecker Corpn...... Milwaukee vertical miller designed to use carbide cutters

24—Bridgeport Safety Emery Wheel Co...... Face grinder with center-control magnetic chuck

27-William Sellers & Co., Inc..... Birdseye view of double-housing planer

28-Cimatool Co. ...... Peerless gear tooth chamferer



## From AIRPLANES

Heald "Bore-Matics" are precision boring, facing and turning work of all kinds in practically every mechanical industry. At much more economical manufacturing costs, these machines give that exacting accuracy and finish now required to assure longer life, better performance and greater efficiency in the finished product.

They can be furnished in three styles; a small economical machine with boring heads on one end, a heavy single end

machine and a heavy double end machine. Whether you have small lots and wide variety of work or mass production of one or several parts, one of these Bore-Matics will just meet your requirements.

A few examples of their possibilities are illustrated. If you have work made of soft steel, cast iron, or non-ferrous material that is to be bored, faced or turned, be sure to get full data about handling it on a Heald Bore-Matic.

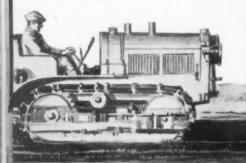
#### to TRACTORS

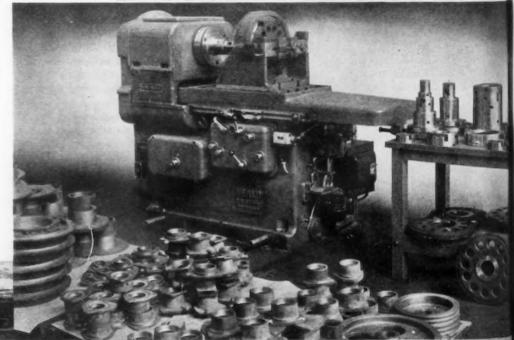
Top—Boring a carburetor casting for airplane engine.

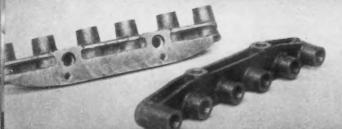
**Right**—Style No. 47 Bore-Matic with various quills for boring and facing tractor bearing cages.

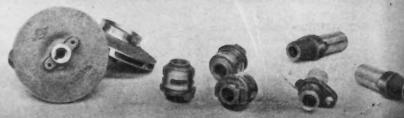
Bottom-Various truck parts all bored on a Heald Bore-Matic.

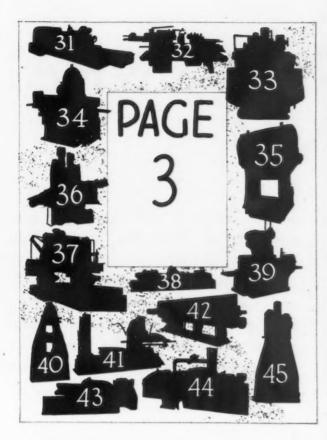
## THE HEALD MACHINE COMPANY WORCESTER MASS. U.S.A.

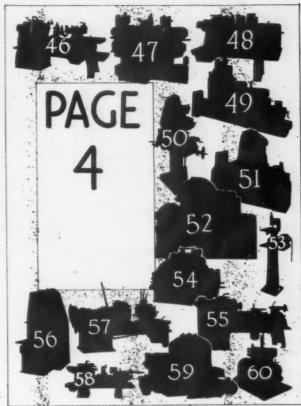












#### THIRD PAGE

- 35-Toledo Machine & Tool Co...... Four-point press, with cushion bed for auto body stampings
- 36-Milholland Sales & Machine Co............ Multiple-head, unit mechanism, drilling and tapping machine
- 37-G. A. Gray Co...... Special production planer
- 38-W. F. & John Barnes Co...... Three-way machine for boring tractor transmission cases
- 39-Pratt & Whitney Co......14-in. vertical surface grinder with hydraulic table drive
- 40-Chambersburg Engineering Co..... Steam drop hammer, 12,000 lb.
- 41-Universal Boring Machine Co...... Tri-way horizontal boring machine, No. 40
- 42-Morton Mfg. Co...... Draw-cut flash trimmer, 10-ft. stroke
- 43—Gould & Eberhardt .......Special machine for hobbing worm gears and milling worms
- 44-National Automatic Tool Co...... Crank and cam hole boring machine
- 45-Erie Foundry Co...... Improved board drop hammer, motor driven

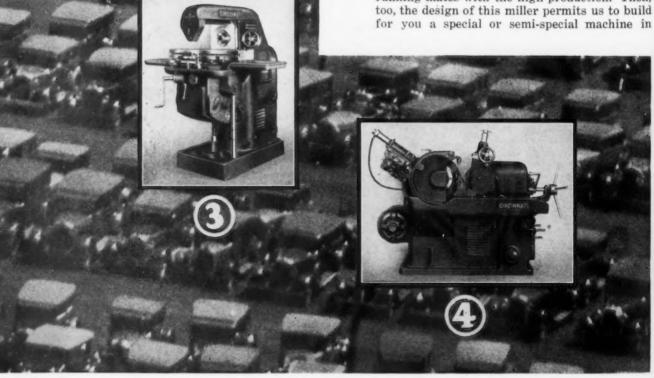
#### FOURTH PAGE

- 47-Gardner Machine Co. . . . . . . Four-head unit for production grinding of auto door hinges
- 48—Bardons & Oliver ...... Turret lathe, No. 3
- 49-Newark Gear Cutting Machine Co..... Gear hobbing machine
- 50-Cochrane-Bly Co. ...... Duplex miller and shaper, with high-speed spindle.
- 52-Joseph T. Ryerson & Son, Inc...... Friction saw, cutting octagonal billet
- 53-Oliver Instrument Co...... Die making machine
- 54-Baush Machine Tool Co...... Three-way multiple-spindle drilling machine
- 55--Boye & Emmes Machine Tool Co...........16-in. geared-head lathe
- 56-Lapointe Machine Tool Co...... Vertical hydraulic surface broaching machine
- 57—Bignall & Keeler Machine Works..... Large pipe machine



Millions of cars, real marvels of speed, comfort, and stamina, are produced yearly-a gigantic production problem. Behind the scenes, Cincinnati Milling and Cincinnati Grinding machines are playing an important part. They signify quantity production at low cost . . . accuracy . . . uninterrupted production schedules.

- The High Speed Dial Types give you the advantages of the high speeds and feeds necessary for the rapid production of non-ferrous parts. At the same time it gives you the added advantages of the lower speed-feed ranges and convenient operating features so desirable in a tool room miller. (Publication No. M-588.)
- For real milling production, you can't beat the Cincinnati Hydromatic. Longer cutter life, smoother finishes, and consistent accuracy are running mates with the high production. Then, too, the design of this miller permits us to build



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short order. Your production line won't get in a jam if it is backed up by Cincinnati Hydromatics. (Publication No. M-616.)

- 3. Your small parts can be milled quicker on the 1-12, because it gives you the combined advantage of a bed type and knee-column type miller. Automatic table cycles, high speeds and feeds, and convenient operating features assure an uninterrupted procession of parts to your assembly line. (Publication No. M-583.)
- 4. The Centerless Grinder, the old stand-by of your industry, is capable of doing even greater things for you than the record finish and production figures of a few years ago. Refinements in designs and new attachments are the reason. Let our grinding machine specialists show you the way to more economical Centerless Grinding. (Publication Nos. G-379 and G-370.)
- 5. You can plan an elaborate production schedule, and you can have the most up-to-date machine tools for meeting that schedule, but the basic requirement of correctly sharpened tools must be met or the machines can not produce. The Cincinnati No. 2 Cutter and Tool Sharpening Machine offers you a rapid and easy method of obtaining the accurate clearance angles which

are so essential to a free cutting tool. (Publication No. M-627.)

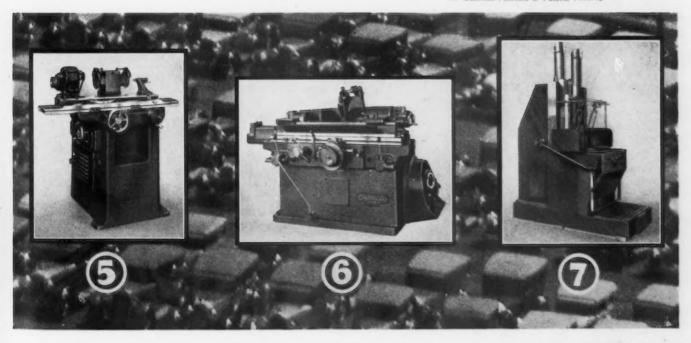
- 6. Your center-type grinding jobs, whether they are large or small, plain or intricate shape, can be ground on the Cincinnati Center-Type Grinders in a manner which will satisfy both your inspection and production supervisors. Our Center-Type group ranges from a small 6" swing Saddle-Type to a 60" swing Roll Grinder. (Specify size and type of machine when writing for catalog.)
- 7. The Cincinnati Hydro-Broach gives you a more economical method of finishing a definite class of parts, ranging from brake-spreaded cams to cylinder blocks. When you want to speed up the assembly line, consider the parts which could be broached. They can be finished on the Hydro-Broach at a rate and to an exactness which will satisfy or perhaps exceed your production requirements. (Publication No. M-584.)

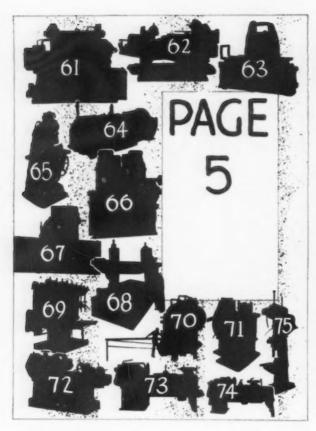
THE CINCINNATI MILLING MACHINE CO. CINCINNATI GRINDERS INCORPORATED

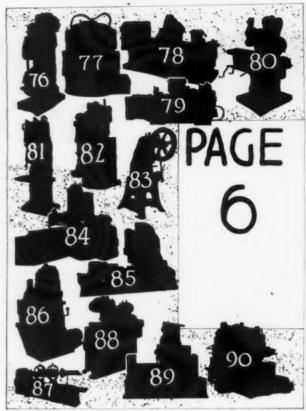
Cincinnati, Ohio, U.S.A.



Al! Machines Patented or Patents Pending







#### FIFTH PAGE

61—R.	K. LeBlond	Machine Tool	Co	Center-drive	automatic	crankshaft	lathe fo	r line-bearing	work.

62—Cleveland	Automatic	Machine	Co	Automatic	scrow	machina
02—Cieveland	A HEIGHT STREET	MINCHILLE	West entre	. ALLEUHISELEC	SULEW	TRISTCALL TATES

64-Acme Machinery Co..... Heading, upsetting and forging machine

65-National Broach & Machine Co..... Automatic gear finishing machine

69-Edlund Machinery Co..... Eight-spindle drilling machine

70-Waterbury Farrel Foundry & Machine Co.. Motor lamination blanking machine

71-Yoder Co. ...... Automatic cut-off machine

72-Murchey Machine & Tool Co..... Threading machine, No. 22

73-Reed-Prentice Corpn. ...... Toolroom lathe, sliding-gear head

74-Cincinnati Lathe & Tool Co..... Lathe for toolroom work

75-Fosdick Machine Tool Co.......Box-column Economax upright drilling machine

#### SIXTH PAGE

76-Rockford Drilling M	Machine Co	High-production	hydraulic	drilling	machine	with	multiple-sta-
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tion indexing table

77-Hanchett Mfg. Co...... Vertical coil-spring grinder

79—Crankshaft Machine Co. ..... Melling crankshaft lathe

80-Van Norman Machine Tool Co.............. Universal miller, No. 22

85-Fox Machine Co. . . . . . . . . . . . . . . . . . Three-way tapping machine for cylinder head work

86-American Broach & Machine Co......20-ton continuous surface broaching machine

89-Diamond Machine Co...... Surface grinder, type H

90-Consolidated Machine Tool Corpn...... Newton planer-type miller with four unit heads, hydraulic feed and dual control

## ... Investment Economy

A BROWN & SHARPE
"LIGHT TYPE"
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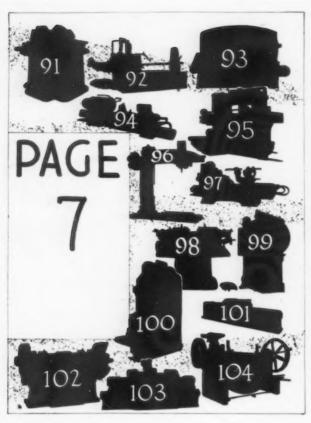
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STRENGTH

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May we send details?

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#### SEVENTH PAGE

91-Hutto Engineering Co., Inc................................ Inclined axis gear lapper

high-speed drive

94-International Machine Tool Co.....Libby turret lathe, type 3H

96-Carlton Machine Tool Co................8-ft. radial drill with adjustable speed motor drive

98-Taylor & Fenn Co...... Duplex spline miller

100-Baker Brothers, Inc...... Simplified vertical hydraulic-feed boring and reaming machine

102-Hammond Machinery Builders, Inc...... High-speed production grinder

103-Greenlee Brothers & Co...... Two-way multiple-spindle drill, with electrical control and auto-

matically indexed fixture

104-Niagara Machine & Tool Works........... Power squaring shear, No. 8G

#### EIGHTH PAGE

106-Bullard Co. . . . . . . . . . . . . . . . . . Mult-Au-Matic, type D

108-Brown & Sharpe Mfg. Co..... Automatic screw machine, with magazine feed, for making hypodermic needle parts

110-William Sellers & Co., Inc..... Birdseye view of large boring mill

111-Cincinnati Milling Machine Co..... Vertical duplex surface broaching machine, Hydro Broach

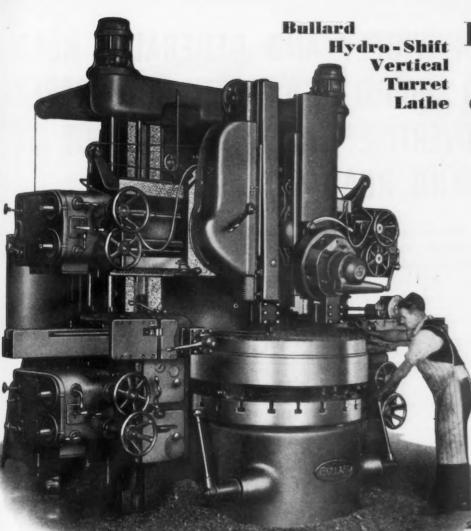
112-Ingersoll Milling Machine Co...... Multiple-way power pack unit drilling and tapping machine

113-National Acme Co...... Six-spindle automatic screw machine, model R

115—Dreses Machine Tool Co......6-ft, multi-duty radial drill

116-National Machinery Co...... Forging machine, motor-driven, with air clutch

117—Giddings & Lewis Machine Tool Co..... Two-spindle horizontal boring, drilling and milling machine with extended saddle, saddle supports and auxiliary runways



#### FOUR HEAD

Concentration

On Those Heavier Jobs

#### Requires:

**Massive Construction** 

Smooth flow of POWER

**Absorption of Vibration** 

Simplicity and Ease of Operation

Rigidity providing for HEAVY Roughing cuts and ACCU-RATE Finishing cuts

Bullard Hydro-Shift Vertical Turret Lathes meet these requirements

#### SIMPLIFIED and EFFICIENT CONTROL

Push button control for:

Main motor Rail Raising motor

**Power Traverse Motors** 

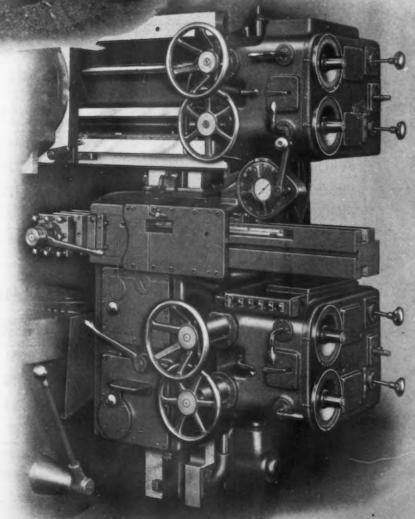
**Emergency Stops** 

Single lever—right and left side of table for combined clutch, brake, and speed change control. Centralized control of other operating levers.

Inbuilt Safety Features.

Ask Bullard Engineers to outline Hydro-Shift Savings on your work.

THE BULLARD COMPANY BRIDGEPORT, CONNECTICUT



# "A PUBLICATION WIDELY AND GENERALLY READ IN A GIVEN FIELD SHOULD BE A PRETTY GOOD PAPER IN WHICH TO ADVERTISE ANYTHING BOUGHT BY THE MEN WHO READ IT" A. H. D. from "Just Between Us Two".

Presented herewith are the investigations of 31 manufacturers showing the widest product diversity—20 different products all told. These 31 manufacturers asked their respective customers which industrial publications they regularly read and found most useful. The replies are tabulated below and confirm the opinion that a universally read publication in a field is a good advertising medium for anything its readers may buy.

SURVEYS BY MANUFACTURERS OF

#### CAPITAL (DURABLE) GOODS

Number of Surveys Per Product	Enameling Ovens	2 Cranes Hoists	2 Trans. Chain	Sand Blast Machines	1 Punching Machines	1 Chucking Machines	1 Boring Machines	Stamping Presses	Factory Heaters	Total Vote
THE IRON AGE	307	478	225	244	94	262	100	148	133	1,991
PUBLICATION B	213	283	217	146	21	238	141	124	15	1,398
PUBLICATION C	165	237	193	121	22	221	113	145	17	1,234
PUBLICATION D	107	287	105	111	51	105	39	62	45	912

26 OTHER PAPERS RECEIVED A SMALLER VOLUME OF VOTES\*

– x —

SURVEYS BY MANUFACTURERS OF

#### **EXPENDABLE (INDUSTRIAL) GOODS**

Number of Surveys  Per Product	3 Lubri- cants	Alloy Castings	3 Tool Steel	2 Belting	1 Milling Cutters	1 Twist Drills	1 Drill Chucks	1 Welding Electrodes	1 Molded Plastics	1 Die Castings	Screw Mch.Prod.	Total Vote
THE IRON AGE	316	670	356	649	145	361	209	91	101	51	100	3,049
PUBLICATION B	159	515	346	352	124	343	250	54	73	28	. 54	2,298
PUBLICATION C	159	436	286	325	121	261	207	42	62	20	29	1,948
PUBLICATION D	238	408	157	485	76	292	55	65	51	33	52	1,912

OVER 50 OTHER PAPERS RECEIVED A SMALLER VOLUME OF VOTES\*

ease



#### SUMMARY

	CAPITAL GOODS	EXPENDABLE GOODS	TOTAL
THE IRON AGE	1,991	3,049	5,040
PUBLICATION B	1,398	2,298	3,696
PUBLICATION C	1,234	1,948	3,182
PUBLICATION D	912	1,912	2,824

31 OUT OF 46 READER INTEREST SURVEYS ARE BRIEFLY SHOWN HERE, DEALING ONLY WITH THE FIRST 4 PUBLICATIONS
\*DETAILS AVAILABLE ON REQUEST

# SDICK

#### **ECONOMAX** SENSITIVE

Our standard Sensitive Drill. We have replaced the cone pulleys with a single belt 21/2" wide, and have eliminated all of the belt-shifting mechanism. The three-speed box, which is on the vertical back shaft, is equipped with hardened alloy-steel gears and anti-friction bearings which operate in a lubricant. The gear-change lever is placed directly in front of the operator. A push-button, placed next to the gearchange lever, provides for automatic change of motor

This machine has six spindle speeds, all controlled by either the gear-shift lever or the push-button. Capacity ranges from 1/2" to 11/4". Bulletin on request.

#### **ECONOMAX UPRIGHT**

Built with either a round or box column in three sizes: 21", 25", and 30", respectively. Maximum production, ease of operation, economy and accuracy, are assured by the following 12 points of superior design:

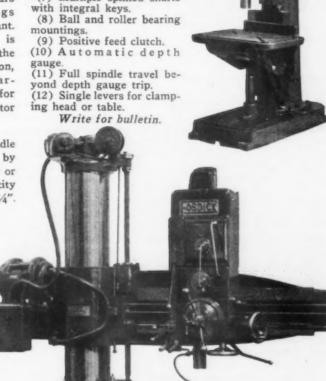
(1) Single lever shift for

12 spindle speeds.
(2) Single lever shift for 9 spindle feeds.

(3) Centralized control.

(4) Spindle reverse.(5) Multiple disc clutch drive.

(6) Alloy-steel gearing.(7) Multiple splined shafts with integral keys.

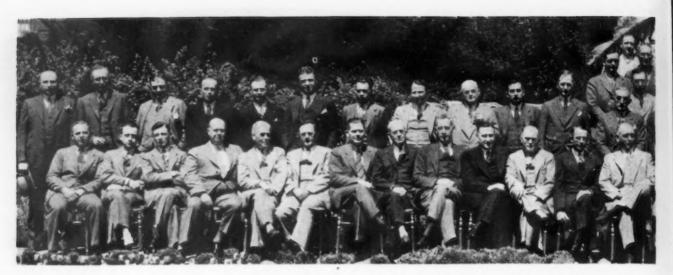


#### ECONOMAX RADIAL

You get up-to-the-minute simplicity, dependability, and ease of operation in FOSDICK ECONOMAX RADIAL DRILLS. Important features include:

Power Rapid Traverse Electric column clamp Thirty-six selective geared speeds Eighteen selective geared feeds Hardened alloy steel gears Heat treated alloy steel spindle All splined shafts throughout Anti-friction bearings to all high speed shafts Spray lubrication to gear train Complete centralized control Safety features for rapid traverse and arm elevating

The FOSDICK MACHINE TOOL COMPANY CINCINNATI, OHIO



Members of the Concrete Reinforcing Steel Institute at

## Reinforcing Materials Fabricators Praise Code

ENERAL commendation of a well-administered code of fair competition was the feature of the eleventh annual meeting of the Concrete Reinforcing Steel Institute, held at the Homestead Hotel, Hot Springs, Va., April 29 and 30 and May 1. In fact, member discussion of the code developed scarcely any criticism except possibly the fact that its trade practice provisions do not cover enough of the products fabricated and distributed by members of the institute.

The desirability of extending the code in essentially its present form was widely expressed, and it was likewise indicated that this industry would like to see the National Industrial Recovery Act extended for another two years without major changes.

#### Jobbers' Agreement Criticized

One feature of code administration which was criticized at the meeting was the jobbers' agreement which members of the industry are forced to sign, with their sources of supply, in order to secure steel. This jobbers' agreement was not a part of the reinforcing materials fabricating code, but the group was naturally greatly interested in its verbiage and enforcement. Perhaps the industry's attitude was best expressed by William H. Pouch, president, Concrete Steel Co., New York, in his address as

president of the institute which opened the meeting.

"It was a great disappointment," said Mr. Pouch, "that our industry had so little to do with the preparation of an agreement which we were forced to sign if we wished to When the steel stay in business. mills submitted the agreement to our members for signature, your officers attempted to have certain changes made in it, but without success. During the past year and a half we have met with various committees of the steel mills and received courteous treatment from them, but our ideas and suggestions have always been ignored. In the first place, we were forced to sign an agreement without ever having had an opportunity to take part in its formation. Second, the manufacturers set our purchase and resale price, thus taking out of our hands the control of our own busi-Third, as soon as they had the 70 or 80 members of our industry committed in this manner, they proceeded to appoint 400 other jobbers to compete with us, appointing lumber dealers, structural steel fabricators, contractors' subsidiary companies and ill-equipped brokers to compete with established jobbers who had invested hundreds of thousands of dollars in buildings and equipment to properly service the reinforced concrete contractors.

"Although the institute entered formal protest three months ago against this jobbers' agreement, no official reply has been received, and I personally trust that this subject will be given serious consideration during our sessions and definite plans be determined upon to correct the existing situation."

#### Urges Consideration of Future

Other highlights of Mr. Pouch's address concerned the future of the industry. "In the first place," he said, "I believe there should be closer cooperation between the manufacturer and distributor of steel bars. Their problems are different in detail but fundamentally they both desire to see the industry grow and tonnage increase. If the creation of hundreds of distributers would increase the production of the mills I would realize why they wish to license jobbers indiscriminately; but, on the other hand, if the addition of hundreds of distributers only tends to create destructive competition in the selling organizations, I believe it is a shortsighted policy on the part of the mills to increase the number of distributers. Such a policy will not bring out any new business, but will, on the other hand, break down the morale of the distributers in the industry and discourage them from doing the promotional work that has in reality built up our trade.

"Another question that should be solved by the manufacturers and distributers is whether or not the distributer has any economical



Their Eleventh Annual Convention, Hot Springs, Va., April 30

## Administration; Report On Road Building

place in the future development of the industry. We certainly had a great deal to do with its development in the past, but have we reached the point where the distributer should withdraw from the mills service and sell direct to the contractor? Our opinion may be biased, but I urge those of our industry who still maintain their independence to prove to the manufacturer that the contractor demands the service which our industry has rendered him for the past 20 years.

"My personal observation has been that during years of depression the steel mills reach out for small orders to keep their mills in operation, but when 75 or 80 per cent of capacity is reached they cannot economically or satisfactohandle chicken-feed orders that make up the bulk of our business in normal times. The tonnage that is ordered in 1000-ton lots and requires no fabricating and moves from the mill direct to the job, may be economically considered a direct mill order. But 90 per cent of the orders received by the distributers which need fabrication, engineering, warehouse service and personal attention should be handled by a distributer and not shipped direct from the mill. I am sure this problem could be solved if proper cooperation could be worked out between the manufacturers and distributers as a whole.

"Still another problem that

troubles us is the lack of cooperation in our own distributing indus-It has been my observation that for short periods, like the year following the organization of our institute, a few months following the Federal trade practice mirage and the recent effort on price stabilization under NRA, our members have worked for the benefit of the group rather than the advantage of the individual. If the members of our industry believe that the function of our institute is to stabilize prices so that they can cut a little under those prices and secure 100 per cent of the tonnage in their territory, then cooperation is a mockery and a snare.

"On the other hand, if cooperation means the building up of the industry so that the total tonnage may be increased through the improvement of our products and service and that we will cooperate with each other to maintain a reasonable profit and not sell below our cost in order to spite a competitor, then our industry will have some hopes of advancing. We have all been through three or four very trying years, and during that period the psychology has seemed to be-the ship is sinking; every man for himself. Personally, I cannot subscribe to that theory in business any more than during a shipwreck. The passengers and crew are not going to be saved unless there is some regard shown for the other man's rights and privileges. Don't misunderstand me as pleading for the inefficient, because I do not believe that the inefficient should receive the same reward as the efficient, but I do strongly believe that the inefficient should not be allowed to break down the efficient business establishment through ruthless and dishonest competition, any more than the cowardly sailor would be allowed to rock the lifeboat."

#### Road Building Plans Encouraging

Particularly encouraging to the industry were the highway plans for this year and next as outlined by Charles M. Upham, engineerdirector, American Road Builders' Association, Washington. Mr. Upham explained that the principal aims of the association which he represented were the securing of an adequate and economic highway building program, the use of the gasoline and motor license taxes for road-building purposes only, and continuation of Federal aid for road building. He stated that the above taxes amounted to nearly \$1,000,000,000 annually, or enough to provide \$700,000,000 annually for new highway construction, \$175,000,000 for maintenance and \$100,000,000 for carrying of debts incurred.

According to Mr. Upham, there are more than 2,000,000 miles of unimproved roads in the country, and the building of 100,000 miles annually might be considered an

adequate construction program. The largest total ever constructed in a single year was 60,000 miles.

Outlining prospects for the immediate future, Mr. Upham explained that \$500,000,000 had already been earmarked for highway construction from the President's

recent \$4,880,000,000 public works fund and another \$300,000,000 had been set aside for grade crossing elimination. More money might be forthcoming under the 20 per cent provision of the act if the States hasten to get work under contract. In addition, \$250,000,000 is still

available from the Federal deficiency appropriation. This practically assures the expenditure of \$1,000,000,000 for highway construction during the next year and should mean the use of large tonnages of reinforcing and other forms of steel products.

## New Type of Steel Frame House is Introduced by Berger Mfg. Co.

NEW type of modern house, developed by the Berger Mfg. Co., Canton, Ohio, subsidiary of Republic Steel Corpn., was introduced in Washington on May 6. The entire skeleton of the house is of steel frames which can be completely erected in two days or less. Pre-fabricated materials are utilized throughout. Four weeks after the first bolt is tightened, the house will be finished and ready for occupancy.

The house being erected in Wash-

designed to meet the demand for moderate priced homes created by the virtual stoppage of residential building during the past half dozen or more years. It is authoritatively stated that there is a national shortage of at least 1,500,000 homes.

The house is modern in design and appearance and is the creation of Kastner and Stonorov, technical consultants for the Berger company, who recently designed a 280 apartment development in Philahouses are flat and basements have been eliminated. The houses can be built with a basement and any type of roof. The exterior will be white painted brick with stucco front entry and porch. Room arrangement eliminates all waste space and reduces housekeeping to a minimum.

One of the ingenious features of the house is a plumbing stack or chase, a self-contained box-like unit containing all water pipes, vents and flues which serves both the kitchen and bath and becomes an actual part of the wall.

All kitchen equipment is placed along one wall. A gas heating airconditioning unit is at one end, followed by a gas range, laundry tub, sink, and mechanical refrigerator all of which are of table height and can be used as a continuous working surface. A steel broom closet is also included.

Hot or cold air, depending on the season, is circulated throughout the house in ducts built into the steel frame. Used air is withdrawn into inconspicuous, attractive grills and carried through the walls, floors and ceilings of the house, insuring even temperature.

"We believe," said L. S. Hamaker, vice-president and general manager of the Berger company, "that a fireproof house of this type utilizing steel where steel is important from an economic and safety standpoint, and other building materials where they are most appropriate and attractive, is an important contribution to the solution of the home shortage problem in this country."

The Berloy steel-frame houses will be marketed through regular building material distributors.



ington, will be priced at \$6,950. This includes not only the house itself, but the lot, landscraping, sewer and water connections, sidewalks, drives—in fact the complete property. The moderate cost of the houses is due to wide use of the plant-fabricated materials which have been developed during the past several years by building material manufacturers.

The house will be built of strip steel frame units and finished with common brick. Any type of ordinary building material, however, such as brick, lumber, stucco or stone can be used. The silver white, aluminum painted steel units also are adaptable to any architectural style or floor plan. This new house development has been

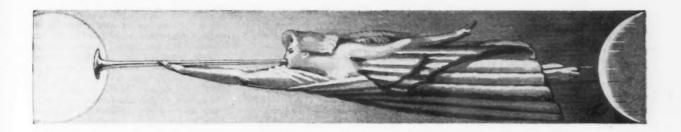
delphia, the first limited dividend corporation housing project completed under PWA.

The steel wall frame units for the houses are rectangles, 3 ft. wide and of desired ceiling height. Steel window and door frames are shop-welded into rectangles of the same size, making all frames interchangeable. The frames are bolted to the foundation and to each other. and steel floor and roof joists bolted to the rectangular wall frames, making a complete, rigid, steel skeleton for the whole house. The entire house is encased in a 1-in. sheathing of cork before the exterior finish is applied-insuring complete insulation.

In keeping with modern architecture, roofs of the Washington

#### Navy Awards 3724 Tons of Armor Plate

ASHINGTON, May 7.—The Navy has awarded 3724 tons of armor plate as follows: Bethlehem Steel Co., 2240 tons, \$1,323,-967; Midvale Co., 1259 tons, \$727,-450, and Carnegie Steel Co., 225 tons, \$136,375.



# NEWS OF THE WEEK

# Government Loses Its First Court Battle To Prevent Republic-Corrigan Merger

HE efforts of the United States Department of Justice to prevent a merger of the Republic Steel Corpn., Youngstown, and the Corrigan, McKinney Steel Co., Cleveland, received a sharp setback on May 2 in a decision handed down by Federal Judge Fred M. Raymond in the Northern District of Ohio, in which he dismissed the Government's suit. Judge Raymond's denial of the Government's contention was based on the "petitioner's failure to prove sufficiently substantial lessening of competition to warrant a finding of probable injury to the public as a result of consummation of the merger."

No decision has been reached by the Department of Justice as to whether the case will be carried to a higher court, but it has been stated that further appeal would be taken directly to the Supreme Court of the United States.

In commenting on Judge Raymond's findings, T. M. Girdler, chairman and president of the Republic company, and Donald B. Gillies, president of the Corrigan, McKinney company, issued the following joint statement:

"Naturally we are deeply gratified at the favorable decision of Judge Raymond in our merger case. From the beginning we have had profound belief in the justice of our case and we used every effort to make a full and fair presentation of the facts at the trial. The case was ably tried on behalf of the Department of Justice and has been carefully considered by the Court. It seems to us that Judge Raymond's opinion is so clear and complete as to leave nothing further to be desired."

Some of the highlights of the decision were:

. Completion of the merger will not affect the relative position of the Republic Steel Corpn. in the industry. The proposed merger appears to be warranted by sound economic considerations and the number and size of competing units disclose that the rival competing units outside the merger are of sufficient strength and activity to insure continuance of vigorous competitive conditions as to all commodities produced by the merging companies. . . .

However inadequate or out-moded they may seem to be in the stress of the present economic situation, we must not overlook the fact that the dominating purpose of our anti-trust laws is to avoid undue concentration of commercial power; to preserve the principle of free, fair and open competition; to keep the door of opportunity open to small business; and to protect the consumer so that he can purchase his commodities at competitive prices. No purpose to forbid all mergers appears.

Courts may take cognizance of the fact that the agencies of the Government charged with enforcement of the Clayton law have during the 20 years since it became effective apparently applied no different construction. Official and semi-official reports reflect that which is likewise a matter of common knowledge, viz., that during the time the Clayton act has been in force combinations, mergers and consolidations have been consummated to a far greater extent than ever before, and frequently in the manner contemplated by the agreement here under consideration. . .

The record is devoid of proof that consummation of the merger contract would be in any sense inimical to the interests of the public. While the evidence justifies the conclusion that competition is to some degree eliminated

as to certain products, that competition may with propriety be designated as deminimis when compared with the competition in the industry as a whole, and as being insufficient to affect the public interest when considered in its relation to the total sales in the competitive areas included within the several States where the business of the merging companies is chiefly conducted. There is no evidence that the contemplated merger was entered upon with the purpose of lessening competition or of exercising control over competitive conditions in the steel industry. The practical impossibility of that accomplishment is so definitely disclosed that no such aim can fairly be implied. Attempted control of competition in an industry where overproduction has for several years been clearly apparent and in which intense competition has eliminated many of the weaker units to the extent that two now control over 52 per cent of the capacity of the industry and nine control over 80 per cent thereof would be futile. The capacity of the industry to produce is greatly in excess of pres ent or even normal demands in every important iron and steel product. In the year 1929, the industry operated at only 89 per cent of capacity and since that time has at no time operated in excess of 40 per cent of capacity. Competition in the steel industry generally will be enhanced rather than lessened as the result of the merger.

There is nothing from which it may be found that the purpose of the merger is to increase the price of any iron or steel product, to create a monopoly, to achieve a mere increase in size, or to ultimately bring about further mergers. The apparent pur-pose on the part of Republic is to acquire additional and needed supplies iron ore and coal and additional facilities supplementing its own, for the manufacture of pig iron and semi-finished steel, and to bring about a reduction in costs in manufacture and distribution. Corrigan's purpose is to unite its stockholders with a corporahaving an excess of finishing facilities, thereby obviating necessity for further capital expenditures in construction or acquisition of finishing plants. The net result will be better balanced facilities making possible manufacture at lowered costs.

# British Steel Industry Reaches Agreement With Continental Raw Steel Cartel

ONDON, May 6-(By Cable). An agreement has heen - reached between United Kingdom and the International Raw Steel Cartel for three months' trial period during which imports of cartel products are to be restricted to 160,750 tons plus 9500 tons of wire rods. The British Government has reduced duties for three months from May 8 to rates ruling before March 26. A longer agreement is to be negotiated. Further meetings are scheduled in Paris, May 10 and 11 and London, May 20 and 21. It is believed that cartel prices delivered United Kingdom will be fixed at 5s. below United Kingdom prices.

Pig iron is dull, but, in view of activity in consuming trades, large contract renewals are expected soon.

Semi-finished steel is quiet because of uncertainty preceding the International agreement, but expansion is now likely.

Finished steel is active, particularly in the building and motor trades, and indicated shipbuilding revival under the Government's scrap and build scheme promises further expansion. Exports are livelier, and large April shipments were made to Canada, Australia, Denmark, Russia, Iraq and South America.

The tin plate home trade is easier, owing to the Jubilee holiday, and exports are quiet. Unfilled orders

on hand at the end of April totaled 2,750,000 base boxes, against 4,000,000 boxes at the end of 1934.

Continental iron and steel demand has also been affected by uncertainty over the United Kingdom agreement now removed. Exports are more quiet, but domestic markets are active. The cartel export program for the current quarter calling for 260,000 tons of semifinished and 150,000 tons of bars, represents a slight reduction from the previous quarter.

# J. & L. Favors River To Lakes Canal

HE Jones & Laughlin Steel Corpn., Pittsburgh, has declared itself as partial to the construction of a canal between the Ohio River system and the Great Lakes if the waterway project is completed at one time and as one project. The company opposes the construction of only the southern half of the proposed waterway, which would consist of canalization of the Beaver and Mahoning Rivers to Struthers, Ohio. Contending that the latter plan would result in a "half-job," the company has issued the following statement, which outlines its position with regard to the proposed canalization:

The Jones & Laughlin Steel Corpn. favors the construction of a canal be-

tween the Ohio River system and the Great Lakes along the route determined to be the most feasible by the Corps of Engineers, United States Army, provided that the entire waterway be undertaken and completed at one time as one project. We are therefore opposed to the proposition to construct at this time only the southern half of the proposed waterway, which consists of canalization of the Beaver and Mahoning Rivers to Struthers, Ohio.

We are opposed to this partial project for the reason that if the opportunity passes to obtain the entire canal, this half-job alone will be of no economic value to the nation as a whole, will afford no advantages to shippers and receivers of freight, outside the narrow circle of industries surrounding the Struthers terminal and possibly some coal interests in the Pittsburgh district, will tax the public for construction and afterward for maintenance solely for the benefit of a very limited number of concerns and will in no wise contribute in proportion to its cost to the national system of distribution through our inland waterways utilized in coordination with our railways and highways.

On the other hand, the construction of this canal in its entirety will materially benefit great populations in the Northwestern and in the Middle Eastern sections of the United States by furnishing an adequate low-cost transportation facility. It will also constitute a factor of safety and service to the whole nation in the event of war when the railroads are devoted to the transport of war materials and troops, just as the rivers and lakes functioned during the World War. It will also contribute materially to solving the great problem of obtaining lower cost distribution, now confronting this country as a major task in accomplishing recovery and for development and progress after recovery.

From a somewhat more restricted viewpoint, the construction of the entire canal will benefit the major industries in the Pittsburgh, Wheeling and Youngstown districts, and thus indirectly benefit the millions of people dwelling in those districts, not only by the expenditure of public funds and the employment of workmen and materials during construction, but by assuring and stabilizing employment after the canal is completed through more firmly establishing industry in the regions mentioned.

From the standpoint of the steel and coal industries, the completion of the whole canal will practically give the Pittsburgh, Wheeling and Youngstown districts a "lakeside" location in the receipt of coal and limestone. The ultimate results will accrue to the benefit of the railroads in the handling of products which would not otherwise be manufactured in the Pittsburgh, Wheeling and Youngstown districts, due to the tendency of steel production to follow markets gradually moving westward toward the lower-cost waterways distribution afforded by the Great Lakes and Western rivers connected by canal through the Illinois River.

# British Prices, f.o.b. United Kingdom Ports

Per Gross Ton

Ferromanganese, export ..... £9
Billets, open-hearth ..... £5 10s.
Tin plate, per

base box..... \*18s. 2d. to 19s. Steel bars, open-

hearth ..... £7  $17\frac{1}{2}$ s. Beams, open-

hearth ..... £7 7½s. Channels, open-

hearth ...... £7  $12\frac{1}{2}$ s. Angles, open-

hearth ..... £7 7½s, Black sheets, No.

24 gage..... £9 5s. Galvanized sheets, No. 24 gage..£11 5s.

\*To June 1; 18s. 5d. to 19s. 3d. there-

# Official Continental Prices, f.o.b. Continental Ports

Per Metric Ton, Gold £

Current dollar equivalent is ascertained by multiplying gold pound price by 124.14 to obtain franc equivalent and then converting at present rate of dollar-franc exchange.

Billets, Thomas. £2 7s.
Wire rods, No. 5
B.W.G. £4 10s.
Steel bars, merchant £3 5s.
Sheet bars. £2 8s.
Plate, ½ in. and up £4
Plate, 3/16 in.
and 5 mm. £4 7s. 6d.
Beams, Thomas. £3 2s. 6d.
Angles (Basic). £3 2s. 6d.
Hoops and strip base £4 2s. 6d.
Wire, plain, No. 8 £5 7s. 6d.
Wire nails. £5 15s.
Wire nails. £5 15s.
Wire barbed, 4 pt. No. 10
B.W.G. £8 15s.

# March Exports at Record Level - Imports Off

Exports of Iron and Stee (In Gro	ss Tons)	the United	States Three M Ended	
	1935	1934	1935	1934
Pig iron. Ferromanganese Iron and steel scrap. Tin plate scrap <sup>5</sup> . Waste-waste tin plate <sup>5</sup> .	137 29 228,338 2,845 1,784	186 2 173,165	682 32 559,688 9,948 5,775	838 8 336,321
Pig iron, ferroalloys and scrap	233,133	173,353	576,125	337,167
Ingots, blooms, billets, sheet bars Skelp Wire rods	7,993 990 1,354	766 2,249 1,180	16,544 2,534 6,314	1,900 3,885 9,381
Semi-finished steel	10,337	4,195	25,392	15,166
Steel bars Alloy steel bars. Iron bars Plates, iron and steel.	4,110 226 80 3,658	3,121 347 25 1,935	13,981 661 347 9,688	9.785 898 195 7,426
Sheets, galvanized steel	7,092	7,738 213	18,594 418	16,817
Sheets, black steel	6,706 316	7,194 349	25,825 1,185	17,854 648
Hoops, bands, strip steel	4,689 9,117	3,038 27,264	10,973 34,337	7,823 64,894
Terne plate (including long ternes) <sup>5</sup> Structural shapes, plain material Structural material, fabricated	3,100 1,647	1,278 1,573	757 6,973 5,484	3,926 5,121
Tanks, steel	604	758 3,752	1,879 8,910	2,886 27.130
Steel rails	808 790	1,770 371	2,217 1,942	8,317 1,423
Casing and oil line pine	9 147	E 479	19 949	14 004

Boiler tubes
Casing and oil line pipe.
Casing and oil line pipe.
Pipe, black and galvanized, welded steel
Pipe, black and galvanized, welded iron
Plain wire.
Barbed wire and woven wire fencing.
Wire cloth and screening.
Wire rope
Wire nails
Other nails and tacks
Other wire and manufactures.
Bolts, nuts, rivets and washers, except
track

193,816 228,889 80.320 Cast iron pipe and fittings
Malleable iron screwed fittings.
Carwheels and axles.
Iron castings.
Steel castings
Forgings 4,384 757 9,474 2,085 4,046 795 1,003 2,334 1,191 715 1.564 61 342 Castings and forgings 3,401 18,979

Total ..... 323,035

335 590

551 328

295

261,269

989 1,261

1,677

814,312

1,234 1,111

1,117

215

9,254

590,476

Imports of Iron and Steel Products Into the United States

(In Gro	ross Tons) March		Three Months Ended March	
	1935	1934	1935	1934
Pig iron	2,708 51 2,800	20,674 121 3,061	15,482 308 8,179	43,337 194 7,203
Ferrochrome <sup>2</sup> Ferrosilicon <sup>3</sup> Other ferroalloys <sup>4</sup>	60	28	361	20 91
Scrap	2,352	6,056	7,557	11,559
Pig iron, ferroalloys and scrap	7,972	29,942	31,889	62,404
Steel ingots, blooms, etc	56 1,881	1,300	622 3,608	300 2,911
Semi-finished steel	1,937	1,479	4,230	3,211
Concrete reinforcement bars	92 50 1,442	26 17 1,031	201 155 5,256	301 126 3,318
Iron slabs. Iron bars. Boiler and other plate. Sheets, skelp, and saw plate.	39 7 422	17 26 371	216 36 1,289	89 49 1,207
Tin plate Structural shapes Rails and rail fastenings Welded pipe	1,719 3 143	1,761 201 109	7,173 621 296	4,314 577 585
Other pipe	3,364 330	302 444 241	3,209 7,265 969	1,108 2,340 646
Telegraph and telephone wire. Flat wire and strip steel Wire rope and strand. Other wire.	153 204 70 177	122 130 93	367 510 283 269	355 378 159
Cotton ties .  Other hoops and bands .  Nails, tacks, and staples .  Bolts, nuts, and rivets .  Horse and mule shoes	1,349 1,339 28 96	1,319 540 18 30	4,790 3,298 86 220	3,182 1,559 71 66
Rolled and finished steel	11,355	6,799	36,559	20,436
Malleable iron pipe fittings5	9	****	46	* * * * *
Cast iron pipe and fittings Castings and forgings	136	150	374	374
Total gross tons	21,409	38,370	73,098	86,430

<sup>1</sup> Manganese content. <sup>2</sup> Chrome content. <sup>3</sup> Silicon content. <sup>4</sup> A New class. No comparable figures for 1934 and previous years. 4 Alloy content.

ASHINGTON, May 7 .-Exports of iron and steel products in March totaled 323,035 gross tons, 94,498 tons above the February figure of 228,537 tons and 61,766 tons higher than the March, 1934, total.

Scrap iron and steel played a spectacular role in this advance, setting a new record with total shipments of 228,338 gross tons, a quantity slightly greater than the total tonnage of scrap exported in the whole of 1932. Scrap, however, was not the only material to gain, as the trade in the other classes of iron and steel comprising this trade increased by 17,888 tons in March over February.

The export trade over the first quarter of 1935-814,312 tonsexceeds that recorded for the corresponding period of 1934 by 223,-836 tons.

Imports of iron and steel products declined in March to only 21,409 gross tons, 7496 tons, or 26 per cent, under the February trade in contrast to the 41.3 per cent gain registered in exports. Imports over the first quarter of this year, 73,098 tons, were only 85 per cent as large as those of the corresponding period of 1934, reduced receipts of pig iron being largely responsible.

# United States Imports of Pig Iron by Countries of Origin

(In Gross Tons)

	Ma		Three M Ended	
,	1935	1934	1935	1934
United King- dom British India	50 1,769	50 3,341	100 4,514	100 12,244
Netherlands. Canada	584	15,786 1,129	6,759 2,405 50	27,468 2,900
France Belgium	50 50	50	50	50
Norway Sweden All others	165	200 118		200 375
Total	2,708	20,674	15,482	24,174

# Sources of American Imports of Iron and Manganese Ores

(In Gross Tons)

		—Ма	rch-	
	Iron	Ore	Man nese centr 35 Per	Con- rates, r Cent Over
	1935	1934	1935	1934
		1,121 11,500 43,414	****	
French Africa Russia India Brazil West Africa Other coun-	7,090	14,700 8,100	10,256	10,063 2,005 3,717 526
tries	72	218	375	
Total	94,884	79,053	12,879	16,312



# B. & O. Light-Weight Passenger Train Completed

HE cars for a new light-weight passenger train ordered last year by the Baltimore & Ohio Railroad have been completed at the St. Charles, Mo., plant of the American Car & Foundry Co. Constructed of U. S. S. Cor-ten hightensile steel, the train weighs about 40 per cent less than an equivalent train of carbon steel. The train, which is of non-articulated construction to permit the cutting out of cars to suit traffic requirements, consists of eight cars, including one mail and baggage car, three reclining - seat coaches, one combination dining and lunch car, two chair cars and one observation car.

The cars are of conventional design, in contrast with the unit type of construction employed in some of the recent streamlined trains, but a considerable weight saving has been achieved through the use of lighter structural materials. The cars have the same outside width as standard B. & O. equipment, but, owing to greater thinness of side wall, are about 3 in. wider in-

side. The roof height of the cars above the rails is about 16 in. lower than in older cars.

To reduce wind resistance the roofs have been rounded, the sides skirted and the windows set virtually flush with the car sides. Folding vestibule steps operating in conjunction with trap doors and a self-adjusting metal closure between cars made possible by the use of O-B Tight-Lock couplers, also contribute to the continuous, smooth outside surface of the train. The end of the rear car has been rounded to give it a semi-streamlined appearance.

This train, which will be named "The Abraham Lincoln," will be placed in service between Chicago and St. Louis, a distance of 284 miles, on July 1. The contemplated schedule calls for a daily round trip run of five hours each way.

The underframe, as well as the superstructure, is of Cor-ten steel having a yield point of 50,000 to 60,000 lb. per sq. in. Trucks are of the American Car & Foundry

light-weight, single-equalizer, four-wheel type. The truck frames and bolsters are of Lebanon Circle L2 electric cast steel, a manganese-chrome-molybdenum alloy having a tensile strength of 100,000 to 115,000 lb. per sq. in. and a yield point of 70,000 lb. to 80,000 lb.

Another train of the same general dimensions, but constructed of aluminum alloy, is now nearing completion. The center sills, however, will be of Cor-ten steel.

# Emergency Freight Rates Simplified

THE application of the 7 per cent emergency freight surcharge resulted in such unwieldy figures that, effective May 4, the carload rates on finished iron and steel were simplified as follows: On carload rates of 3c. to 10c. per 100 lb., a flat surcharge of ½c. is added; on rates over 10c. to 20c., 1c. per 100 lb. is added; on rates from 20c. to 28c., a surcharge of 1½c. is added. On rates over 28c. the surcharge is 2c.

# Coming Meetings

May

Machinery and Allied Products Institute.
May 14. Annual meeting, Hotel Cleveland. Alexander Konkle, 221 North La-Salle Street, Chicago, assistant secretary.

American Gear Manufacturers Association. May 14 and 15. Annual convention. Penn-Lincoln Hotel, Wilkinsburg, Pa. J. C. McQuiston, Wilkinsburg, manager-secretary.

National Metal Trades Association. May 15 and 16. Thirty-seventh annual convention, Hotel Cleveland, Cleveland. Harvey S. Flynn, 122 South Michigan Avenue, Chicago, secretary.

Chicago, secretary.

National Supply and Machinery Distributers' Association, American Supply and Machinery Manufacturers' Association and Southern Supply and Machinery Distributers' Association. May 14 to 16.
Triple convention, Carolinas Hotel, Pinehurst, N. C. George A. Fernley, 505 Arch-Street, Philadelphia, secretary of the National Association; R. Kennedy Hanson, 604 American Bank Building, Pittsburgh, secretary-manager of American Supply Association, and Alvin M. Smith, Richmond, Va., secretary-treasurer of Southern Association.

# WEIGHTS OF LIGHT-WEIGHT PASSENGER CARS BUILT FOR THE B. & O.

	Mail-Baggage		Reclining Seat		Dining-Lunch		Chair Car		ObsChair Car	
	Cor-ten	Alum. Alloy	Cor-ten	Alum. Alloy	Cor-ten	Alum. Alloy	Cor-ten	Alum. Alloy	Cor-ten	Alum. Alloy
Shell weight, lb Body light wt. (est.), lb. Trucks, weight, lb. Total lt. wt. (est.), lb.* Water, ice, provisions, etc. Wt. ready for service (est.), lb	33,680 61,580 25,520 87,100 350 87,450	22,920 51,040 25,520 76,560 350 76,910	33,920 72,900 24,600 97,500 1,300 98,800	23,520 62,700 24,600 87,300 1,300 88,600	33,340 $75,930$ $25,520$ $101,450$ $6,000$ $107,450$	22,920 65,760 25,520 91,280 6,000 97,280	33,920 72,500 24,600 97,100 1,300 98,400	23,520 62,300 24,600 86,900 1,300 88,200	31,760 66,800 24,600 91,400 1,300 92,700	22,020 57,250 24,600 81,850 1,300 83,150
Total weight of Cor-ten eight-	car steel t	rain-78	0,800 lb.							

Tatal weight of aluminum alloy eight-car train—699,540 lb. Total weight of equivalent train of conventional steel construction—1.300,000 lb.

<sup>\*</sup>Estimate includes about 6800 lb, weight of Duryea center sill and attachments and approximately 5000 lb, for air-condition and heating equipment on passenger-carrying cars.

# April Steel Production Recedes Moderately; Output at 45.3 Per Cent of Rated Capacity

RODUCTION of Bessemer and open-hearth steel ingots during April was 2,606,311 gross tons, according to the American Iron and Steel Institute. This amounted to 100,243 tons daily and engaged the industry's rated capacity at 45.28 per cent.

March output was 2,830,700 tons, or 108,873 tons daily, equivalent to 49.18 per cent of capacity. In April, 1934, the industry made 2,897,808 tons of ingots, operating at a daily rate of 115,912 tons, and engaging capacity at 52.64 per cent.

MONTHLY PRODUCTION OF OPEN-HEARTH AND BESSEMER STEEL INGOTS

(Gross Tons)
Reported by Companies Which Made 99.32 Per Cent of Open-Hearth and 100 Per Cent of Bessemer Ingot Production in 1933

	Open-		Output All C		No. of Work- ing	Per Cent Opera-
1934	Hearth	Bessemer	Monthly	Daily	Days	tion‡
January February March April	1,786,467 1,993,638 2,540,143 2,622,372	172,489 175,873 203,904 257,482	1,970,979* 2,182,826* 2,760,888* 2,897,529*	72,999* 90,951* 102,255* 115,901*	24 27	33.15* 41.31* 46.44* 52.64*
Four months May June July August September October November	8,942,620 3,000,624 2,714,983 1,343,732 1,245,445 1,126,415 1,325,225 1,447,297	809,748 331,620 282,592 119,869 109,598 117,580 127,789 132,059	9,813,314* 3,352,695* 3,015,972 1,472,584 1,363,359 1,251,630 1,461,932 1,589,049	95,517 124,174* 115,999 58,903 50,495 50,065 54,146 67,117	103 27 26 25 27 25 27 26	44.54 56.39* 52.68 26.75 22.93 22.74 24.59 27.76
December	1,797,830	131,456	1,941,127	77,645	25	35.26
Total	.22,944,171	2,162,311	25,260,570	81,224	311	36.89
January February March April	2,576,671 2,500,062 2,582,211 2,358,249	239,858 224,336 230,810 231,916	2,834,170 2,742,125 2,830,700 2,606,311	104,969 114,255 108,873 100,243	27 24 26 26	47.42 51.61 49.18 45.28
Four months	10,017,193	926,920	11,013,306	106,906	103	48.30

\*Revised. ‡The figures of "per cent of operation" are based on the annual capacity as of Dec. 31, 1933, of 68,478,813 gross tons for open-hearth and Bessemer steel ingots.

# Armco Head Assails Wagner Bill on Radio

F the several legislative proposals now pending before Congress, none would more seriously retard industrial recovery than the Wagner Labor Relations Bill," said Charles R. Hook, president, American Rolling Mill Co., in a recent radio address. "Recently there have been so many misstatements concerning the provisions of this bill and misinterpretations of its purposes that it is high time that the American public knows something of the real intent of the bill, of the influences behind it, and of the far-reaching threat it would carry to the freedom of millions of citizens.

"It would place the Federal Government in the position of dictating the most intimate labor relationships between the employers and their employees in every city, town, and hamlet in the country.

This is a responsibility which our Government should not assume and cannot possibly meet. It would deprive both the employers and the employees of their inherent rights as free American citizens to conduct their relations in a spirit of mutual respect and confidence, under local conditions and free from the interference or dictation The far greater of third parties. progress attained by American in-dustry as compared with that of any other nation and the far higher standards of living of the American working man, were attained under this expression of free rights in industry. We may properly inquire as to the identity and motives of those who would now abandon these free rights in favor of the dangerous experiment threatened by the Wagner bill.

"The steel business is recognized as one of the most important industries from the standpoint of national recovery. It provides employment for more than 400,000 workers. Records made public at the annual convention of the American Federation of Labor at San Francisco in October, 1934, showed a total paid membership in the Amalgamated Association of Iron, Steel and Tin Workers of only 5500 steel company employees, or considerably less than 2 per cent of the total of more than 400,000."

# National Metals Trades Program Announced

THE formal program for the thirty-seventh annual convention of the National Metal Trades Association, to be held at the Hotel Cleveland, Cleveland, May 15 and 16, has been announced as follows:

WEDNESDAY, MAY 15

. 9.45 a. m.—Assembly.

10 a. m.—Call to order. Report of President Alexander Sellers. 10.30 a. m.—"Appraisal of the NRA"

10.30 a. m.—"Appraisal of the NRA"
—Gilbert H. Montague, attorney. 67
Wall Street, New York.
11.15 a. m.—"Practical Treatment

11.15 a. m.—"Practical Treatment of Industrial Relations Problems"— Louis Ruthenburg, president, Servel, Inc., Evansville, Ind.

11.45 a. m.—Discussion—George Seyler, works manager, Lunkenheimer Co., Cincinnati; C. S. Craigmile, vice-president in charge of production, Belden Mfg. Co., Chicago.

2 p. m.—"How to Retard Recovery"

—W. B. Bell, president, American
Cyanamid Co., New York.

2.30 p. m.—"Facts and Fairies"—

2.30 p. m.—"Facts and Fairies"— Hon. James Emery, general counsel, National Association of Manufacturers, Washington.

3.15 p. m.—"The Threat of Political Banking to the Durable Goods Industry"—Malcolm Muir, president, McGraw-Hill Publishing Co., Inc., New York City.

3.45 p. m.— "Transportation and Business Recovery" — Judge R. V. Fletcher, vice-president and general counsel, Association of American Railroads, Washington.

# THURSDAY, MAY 16

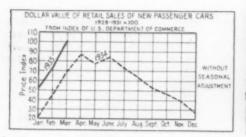
9.30 a. m.—"Economics of the New Deal"—Prof. O. G. Saxon, Yale University, New Haven, Conn.

10.15 a.m.—"Americanism and Communism"—Hon. Hamilton Fish, Jr., Congressman from New York.

11 a. m.—"Prosperity and Social Security"—Professor Edwin S. Todd, Miami University, Oxford, Ohio.

# U.S.S.R. Wants Sales Literature

RANK HERZOG, consulting engineer, Bol. Ural Gost. 150, Sverdlovsk, Ural, U.S.S.R., would like to receive catalogs and other descriptive material from manufacturers of equipment and supplies wishing to do business with U.S.S.R.





# THIS WEEK ON THE

# Chevrolet Tie-Up Brings About Many Shifts in Manufacturing Plans

DETROIT, May 7.

THE American Federation of Labor has given every indication of being proud of having caught Chevrolet short of transmissions and thereby causing cessation of operations in Chevrolet's principal assembly plants, including the new one at Baltimore recently opened. It has mistaken the temper of the men who run General Motors, however, if it thinks by this action it can force down the throats of Chevrolet a closed shop agreement.

The A. F. of L. argues that it isn't asking for a closed shop, but only a written contract covering conditions of employment. That is quibbling over technical points, because everyone knows that if the Federation were granted what it wants, for all practical purposes it would have the equivalent of a closed shop. And General Motors, backed by the entire industry, is insistent at all costs on maintenance of the traditional open shop which has resulted in automotive workers being among the highest paid hourly employees in all of

Admittedly Chevrolet is in the toughest spot in years. Its dealers were just beginning to cool off after a series of violent protests over being unable to get cars in the first quarter because of delays in manufacture of the turret top, when along comes a strike to cut off production. Since dealers have no cars to sell, it is understood that Chevrolet temporarily has cancelled all newspaper advertising. Meanwhile, Ford and Plymouth, while solidly with Chevrolet

in its stand against unionization, are not wasting any time in gobbling up all the available retail business. Even more sickening to Chevrolet's sales executives is the thought of what their competitors must be doing in attempting to pick off the better Chevrolet dealers, especially at points where Ford and Plymouth may be weak.

## Embarrassing Questions Asked

Some embarrassing questions are being asked about the present Chevrolet situation. Since the manufacture of transmissions at Toledo formed a production bottleneck, how does it happen that transmissions weren't built ahead in large volume during the time when assemblies were waiting on greater output of turret tops? If this had been done, as it was done with other key parts, a shutdown at Toledo wouldn't have paralyzed Chevrolet in less than 10 days.

Then car manufacturers are so insistent on having three sources of supply when they buy materials or parts outside, yet are content to depend on a single source when they make a part themselves. If Chevrolet had applied to itself the rule it lays down for its suppliers, it wouldn't have got in its present jam because of the shutdown at Toledo.

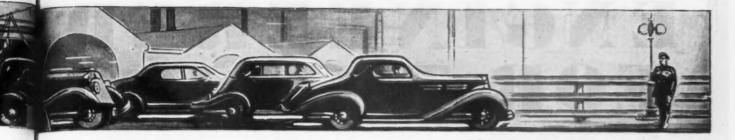
Of course, it is always easy to think of what should have been done. If a mistake was made, General Motors is moving swiftly to see that a similar one doesn't occur again. The recently deserted plant of Muncie Products at Muncie, Ind., is a hubbub of excitement as nearly 1000 men scurry

about preparing for the production of Chevrolet transmissions. The fact appears definitely established that Chevrolet's truck transmissions will be built there and possibly some passenger car transmissions. At any rate, the report is that 100 units an hour are to be turned out beginning May 15. If that volume can be attained by that date, General Motors will have done one of the speediest jobs in its history.

# Pontiac Shifts Transmission Work

Pontiac, as reported in this column a week ago, is looking to Buick at Flint for its transmissions. Manufacture got under way within 72 hr. after the decision was made to transfer work there from Toledo. The supply of transmissions being furnished the Pontiac factory by Buick before the end of last week actually exceeded Pontiac's daily requirements. The Toledo strike merely hastened the shift of Pontiac transmission work to Flint, as this change already was scheduled for the beginning of the 1936 season. Chevrolet's Toledo plant is hemmed in on all sides so that expansion is impossible. It was decided some time ago that all the capacity there next year would be needed by Chevrolet.

Chevrolet at Flint is said to have bought about \$150,000 worth of equipment for the manufacture of transmissions for the 1936 Standard Chevrolet passenger cars. The transmission for the Standard job, heretofore made at Toledo, differs from that for the Master. It is believed that production will be established at Flint, although



# ASSEMBLY LINE

there has been some talk about using an idle plant at Saginaw. General Motors of Canada has announced that it will make its own transmissions in 1936 instead of importing them from Toledo and Flint. So the concentration of transmission manufacture by General Motors is well on the way toward being broken up.

If the Toledo situation is straightened out soon, the effect is likely to be to throw into June a substantial volume of Chevrolet's manufacture originally scheduled for May. On the other hand, if the strike is prolonged, Chevrolet may be deprived of part of its expected output.

# Labor Situation Badly Muddled

There seems to be some uncertainty whether the turn of events at Toledo has affected the status of plant elections held by the Automobile Labor Board. However, Mr. Knudsen is quoted to the effect that the set-up of employee bargaining committees in each automotive plant under the labor board's authority will not be disturbed. Observers are commenting on the fact that Doctor Wolman has stayed completely in the background during the Toledo trouble with neither side seeking his services. In fact, he and Nicholas Kelly of the Automobile Labor Board have been in New York and hence unavailable during the most crucial stage of negotiations. This is in sharp contrast with the situation a year ago when the board aggressively took the leadership in settlement of various strikes. It is regarded as significant that Washington sent Edward F. McGrady, Assistant Secretary of Labor, to attempt to end the deadlock and he instead of Doctor Wolman will supervise the vote to be taken among employees at Toledo Wednesday to decide whether a majority wish to return to work.

It seems clear that the strike developed in an A. F. of L. local at Toledo which apparently was

BY BURNHAM FINNEY Detroit Editor, The Iron Age

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not amenable to discipline from national headquarters. President Green, so far as is known, has never sanctioned the Chevrolet strike. He has been put in the position of having a hot potato dropped into his hands and having no other recourse than to juggle it around to keep from getting too badly burned. In other words, underneath the surface it is believed that the Federation leaders aren't so elated about the turn of events as their public language might indicate. Their own people at Toledo apparently have forced them out on a limb which General Motors may proceed to saw off.

# Union Solidarity a Myth

The solidarity in the ranks of Chevrolet workers on strike, which the A. F. of L. had indicated, has proved to be a myth. A group of 800 employees of the Toledo plant met Friday night and formed the Independent Workers' Association. Leaders of this group have circulated petitions pledging a return to work on terms outlined by Mr. Knudsen originally as the basis for an agreement prior to the calling of the strike. While these terms specify a blanket increase of 5 per cent in hourly rates, they mean more than that. The increase is to be piled on top of readjustments of rates which have got out of line. In some cases workers will benefit to the extent of a 20 per cent boost.

At the request of the Independent Workers Association, an election under Federal supervision will be conducted Wednesday among Chevrolet's Toledo employees to decide whether to go back to work on the basis proposed originally by Mr. Knudsen. The election is in line with the demand for a vote

made by the Chevrolet management at the beginning of the strike. If a majority favor a reopening, the plant will resume operations probably late this week. Francis Dillon, A. F. of L. organizer, states that the Federation will abide by the results of the election and if a majority vote to return to work the strike will automatically end. There is some question whether Mr. Dillon, apparently having lost control at Toledo, is in a position to make such a pledge. The point is that the A. F. of L., having let a local organizer get it into a bad jam, seems to be frantically seeking a way out, hoping at the same time to save its face.

With new car sales steadily moving upward and production not visibly retarded yet by the setting in of a seasonal recession, it is unfortunate for the automobile industry and a score of industries dependent on it that the Toledo strike occurred. Squarely upon the shoulders of the A. F. of L. rests the responsibility for casting a pall of uncertainty over the only district in the country in which the economic sky has been cloudless. Chevrolet will carry on production at Flint and at the local gear and axle and forge plants on a reduced basis, storing parts against the time when transmissions can be obtained. Practically all steel and parts releases have been held up, however, resulting in lower sheet and strip mill pperations.

## Retail Sales Up 63 Per Cent

Mixed with the bad news are some cheerful facts. Passenger car registrations in March are put at 261,477 cars and April at 335,000, bringing the total for the first four months up to 903,727, a 63 per cent gain over the 552,316 cars registered in the comparable period a year ago and 1,047,627 in the same months of 1930.

Chrysler Corpn. built 89,000 cars (CONTINUED ON PAGE 96)

THE IRON AGE, May 9, 1935-51

# ENGINEERED FOR THE JOB

SPEED

FEED

20 FEET PER MINUTE

These P & W cutters slab mill brass alloys and nickel silver billets at or above these figures . . . . Cutters to remove metal at this rate must have everything necessary to maintain uninterrupted service . . . . Like all P & W cutters they have:

STEEL melted and forged to our own specifications
DESIGN and WORKMANSHIP to fit the JOB
HARDENING by Pratt & Whitney special process

Have YOU tried P & W cutter service?

PRATT & WHITNEY CO. HARTFORD. CONNECTICUT

PRATT & WHITNEY MILLING CUTTERS



# BY L. W. MOFFETT Resident Washington Editor, The Iron Age

ASHINGTON, May 7. Business, as personified by the Chamber of Commerce of the United States, came to Washington en masse with its fighting togs on and castigated the New Deal on 52 fronts, thus exhausting the deck, with jokers thrown in. . . . It made the New Deal the object of scorching language which might well be envied by the High Priests of Word Coiners, including some of the New Dealers in the upper strata, the Coughlins, Longs, and a growing crop of others who are peppering the country with sprouting isms. . .

But the President struck back. . . . He said many business organizations misrepresent the view of their individual members and charged that the Chamber resolutions on social security legislation do not take the human side into account.

Product of a different school, but a self-sufficient unit, the American Federation of Labor gathered its hosts in Washington at the same time and accelerated its tempo as it droned strike threats, dreary as unchanging drum beats, unless Congress hustles through organized labor's legislative program pronto.

The Wagner labor disputes bill was approved by the Senate Committee on Education and Labor on precisely the same day organized

# THIS WEEK IN WASHINGTON

United States Chamber of Commerce states position against practically all New Deal legislation.

President makes political capital out of attack by saying Chamber does not represent business as a whole.

Fate of NRA still hangs in balance as Senate committee recommends extension for only 10 months.

Supreme Court decision voiding railroad pension legislation may lead to some purchasing by carriers.

Wagner bill is reported on favorably by Senate Committee on Education and Labor.

labor forces flocked into Washington for a field day, April 29. . . President Green sent them a-lobbying to the halls of Congress, admonishing them to see their Congressmen and Senators "and line them up for these progressive bills." Then they were advised to return home and write letters to Washington demanding enactment. . . . "Get your friends among merchants, professional people and preachers to do likewise," said Mr. Green. "Remember that Congressmen are more responsive to a letter from back home than to all the noise we can make in Congress." . . . Mr. Green's last line reflects most unusual modesty but it is true to a most unusual degree, a fact labor seems to understand better than do most business groups. . . . Certain it is that labor's strategy was good, for it laid down its barrage as a counterirritant to the Chamber of Commerce attack not only on New Deal legislation but on labor's program.

and timed its explosives with those of the Chamber. . . And it got the first reaction, which was favorable. . . . What may be the final outcome is most anybody's guess. . .

The President omitted many subjects which the country had expected he would discuss in his "fireside" broadcast and among omissions were the Wagner and the 30-hr. work week bills which organized labor is shouting for, even though some leaders perhaps have their tongues in their cheeks as to the 30-hr. bill. . . . The White House never has taken a position, publicly at least, on either bill and it is suspected it would like to see both scrapped entirely or left over again for another session. . . . Industry did not get much comfort from the President's "fireside" talk and actually the talk received only faint praise even on the "Hill" from New Deal supporters. . . .

There was "off the record" criticism that the speech lacked force,

was unconvincing and was especially notable for what was not said on such important subjects as monetary policies, silver, further devaluation, or stabilization, taxation, bonus, labor, etc. . . enough legislation was laid out to last Congress throughout the summer, whereas business wants it to shut up house and beat it back home, a sentiment frequently heard at the Chamber gathering and in business circles throughout the country. . . . At that, it is still be-lieved the White House will be compelled to sidetrack some of its program. . . . It certainly would if the majority of Congress had its way. . . . They want to go home, for the most part. . . .

The New Deal program is embarrassing many members whose faltering loyalty arises from growing complaints from "back home" . and a new political campaign will start before long. . . . Thus two fears stare members in the face. . . . White House resentment can be made most practical now that the spigot from the \$4,880,-000,000 work relief barrel can be turned off or on. . . . And the boys are begging to have it turned on wide open. . . . As are mayors, governors, etc., who rushed in droves to Washington to see about getting theirs. . . . And a mighty job it will be to separate the wheat from the chaff. . . . If this mountain of money, record appropriation since time began, is spent without political repercussions, a near miracle will have happened. . . . It was humorous to see members of Congress, voting the money carte blanche, hastening to the White House to find what it was to be spent for. . . . Congress thus admitted it did not know what it was voting for. . . . Which recalls a commonplace remark in Washington that as a cross section the present Congress marks an alltime low in intelligence and ability, but a wee sign of more backbone than the first New Deal Congress. . . . Which is a doubtful compliment. . . .

So it is no wonder that columnists and others having what is affected to be the lowdown on what Congress is going to do are compelled to assume the role of the Delphic oracle. . . . Time was when Congress could find out from the White House what Congress was going to do. . . . But the swiftly changing scene in the Washington madhouse leaves everybody up in the air, including the White House. . . . Than which there is no better example than the legislation plans for NRA. . . . It resembles the shell game. . . . Now-you-see-itnow-you-don't. . . . There is a huddle at the White House on the Clark resolution to extend NRA till next March. . . . Senators are reported to have sold the President on the plan, the Administration thus yielding its two-year extension bill. . . . Then Donald Richberg, former assistant to President, super-coordinator, head of National Emergency Council, now shifted to chairmanship of NRA, rushed in, and, with the aid of Madam Secretary of Labor Perkins, ardently pleads for the Administration bill. . . The President was then reported to be resold on the original plan and as wanting to see NRA "thoroughly discussed" and extended two years.

Senatorial supporters agreed. . . others grumbled. . . . Next day the Finance Committee adopted the Clark resolution to continue the bill till next April . . . with highly important amendments which would prohibit price fixing except as to mineral natural resources, tear out intrastate regulation and require the President to review all codes to see that these provisions are barred. . . . This means a revamping of major proportions of the code structure, and, in the minds of many, leaves NRA as flat as a flounder and as attractive to industry generally as greenback currency. . . .

Interestingly enough, this smash at NRA by its foes came on the eve of arguments in the Supreme Court in the Schecther poultry case, which Mr. Richberg has said is the major test as to the constitutionality of NRA. . . . The truth is that many supposed supporters of NRA are giving lip service only and would like to see it scrapped. . . Scrapping this major covery" alphabetical agency as a new Presidential campaign approaches would be poor political tactics. . . . And it may pass out just before the political conventions at that. . . . It would under the Clark resolution, unless further extension is legislated, a thing which depends perhaps largely on the way NRA is administered. . . . Even more Governmental control is anticipated and some of the present major code structures may be so changed that they will not be recognizable. . . .

NRA reacted badly to the Finance Committee action... Richberg was put back on the job to revive what General Johnson said was a "going concern" when he left it... The implication being, of course, that since then it has gone into bankruptcy, an implication that arouses the ire of Mr. Richberg... The NRA situation is part of the woof and warp of a tangled web in Washington, leading to no one knows where...

Orthodox members of both the major parties-both is correct now that the Republicans are again coming to life-say the underlying trouble is that young and old amateurs in Government, with crackpot ideas, rather than fixed radical views, have had too much influence in framing legislative programs. . Business does better in spite of cocksure theorists who propose one thing one day and, seeing it fail, turn to some other quack scheme. . . Some say if confidence existed, however, business would pus h ahead to a point where fear might be felt for an undesirable boom unless restrained. . . Capital goods investment alone would jump quickly to at least \$5,000,000,000, so it is said. . . . Thus one item alone would top the huge works relief fund. . . . But there is fear of credit inflation, which many think is in the offing, of the Eccles banking bill, said to be slated for passage next month, with Government control over credit, of further boost of silver, of further devaluation of gold dollar, dependent on the action of gold countries, especially France, and important countries not now on gold standard.

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# Department of Justice Awaits Steel Merger Decision Record

At the Department of Justice, it was stated no decision would be reached as to whether it would appeal the decision of Judge Raymond in Cleveland approving the Republic-Corrigan-McKinney merger until after the official opinion had been read. It was stated that, in the event appeal is made by the Government, it will be made directly to the Supreme Court.

# Wagner Labor Bill Reported Favorably

The Wagner labor disputes bill was reported favorably to the Senate last Thursday by the Committee on Education and Labor. This measure, a source of bitter controversy be tween organized labor and industry, proposes a permanent National Labor Relations Board as an independent body fortified with broad powers of enforcing decisions, bars employers from financing so-called company unions, and provides for collective bargaining under the majority rule.

Industry contends it would mean abolition of employee representation plans, would inevitably set up the American Federation of Labor as a monopoly in controlling bargaining relations with employers without protection to employers against labor's coercion, although employers are barred from coercing labor.

The principal amendment to the bill, heretofore analyzed, would require employers to bargain collectively when requested to do so by employees. The labor board would be an independent body and would not be in the Department of Labor, as had been requested by Secretary of Labor Perkins. The Administration has not made known its position on the bill. No time has been set to take it up in the Senate. Senator Wagner, sponsor of the measure, however, is urging that it be taken up at an early date and in this effort is being supported by members of the labor committee.

# Left Wingers Still After Tighe

Left wingers, outlawed from the Amalgamated Association of Iron, Steel and Tin Workers, are still seeking the scalp of Mike F. Tighe, president of the association. Thrown out by Mr. Tighe when they participated in a rump meeting several months ago in Pittsburgh, they have since then been seeking vengeance. Though not playing with the left wingers, powerful organized labor leaders in other unions also want Mr. Tighe ousted. They do not think Mr. Tighe has been "aggressive" enough in stirring up and organizing steel workers.

They want to reorganize the steel industry union forces along an entirely new line through Federal charters and to embrace workers not only in the producing end of the steel industry but in all its ramifications, from the raw product even to the use of finished lines, to say nothing of workers in captive coal mines. At the same time these organized labor leaders find themselves in a dilemma, for, in pushing such a program, they are sponsoring a move being activated by the outlawed Amalgamated men, and the two groups are not on speaking terms.

President William Green of the American Federation of Labor is finding that it calls for all the diplomacy he can muster to handle the situation. He does not negotiate with the outlawed Amalgamated men, yet he apparently fears to shun them entirely. This was indicated again last week when a delegation of left wingers, headed by Clarence Irwin of Youngstown, came to Washington, to lay complaints against Mr. Tighe before the Executive Council of the A. F. of L. Mr. Green denied their request but sought to mollify the delegation by saying he would send a personal representative to investigate the complaints against Mr. Tighe. The left wingers say this promise doesn't mean anything.

# Decision Against Steel Company

The National Steel Labor Relations Board on May 1 handed down a decision holding that the Gulf States Steel Co., Gadsen, Ala., had violated Section 7-a of the recoverv act because of so-called interference with the self-organization of its employees and discrimination against 16 members of the Amalgamated Association of Iron, Steel and Tin Workers, "by ter-minating and depriving them of their employment because of union affiliation and activity." The board gave the company 15 days in which time to reinstate the workers provided the latter applied for reinstatement within 10 days. Unless the employees are reinstated under these conditions, the board said, the matter will be referred to the Compliance Division "and to other agencies of the Federal Government for appropriate action." The evidence in the case showed that the company stood ready to negotiate with a committee from the union as representatives of employees, but not as representatives of the union as such.

# Rail Decision Aid to Purchases?

The five-to-four decision of the Supreme Court holding the railroad retirement act invalid because it exceeded the constitutional authority of Congress has created speculation as to whether the carriers, relieved of the financial cost of pensioning 146,000 workers, would now be more likely to come into the market for equipment. One of the contentions of the carriers in seeking additional revenue through higher rail rates was the fact that it faced the possibility of having to comply with this act, the first social security legislation passed under the New Deal.

The majority decision upheld a decision of the Supreme Court of the District of Columbia. It brought forth from Majority Leader Robinson of the Senate the statement that he would demand "careful consideration" of President Roosevelt's social security program to make it "conform with the principles" of the Supreme Court's decision. The decision thus was seen as being a large influence in reshaping the entire social security program of the Administration which came in for sharp attack last week by the Chamber of Commerce of the United States. It offered to industrialists the hope that the proposed burdens of the program would be lightened and a broad revision of the legislation made necessary.

Senator Robinson indicated that he had expected the Supreme Court to hold the railroad retirement act invalid. He recalled the fact that he opposed the legislation when it was rushed through Congress.

# Labor Board Holds for Unions

In decisions handed down Monday, the National Labor Relations Board ordered the Petroleum Iron Works, Beaumont, Tex., to recognize two craft unions for purposes of collective bargaining, and served notice upon J. C. Ertel, Jr., operator of the Commercial Foundry, St. Louis, that unless within seven days he reinstated 75 striking union workers and recognized the International Molders' Union, No. 59, for purposes of collective bargaining, the case would be referred to the compliance division of the NRA and to other enforcement agencies of the Government. This latter order means that unless it is complied with the Blue Eagle would be withdrawn from Mr. Ertel and the Department of Justice asked to prosecute him.

The Petroleum Iron Works case grew out of an alleged stand by the company that it would not deal with bargaining group members not on its own payroll, "even though such representatives were duly selected by its employees to represent them," according to the National Labor Relations Board. It stated that on May 14, 1934, the San Antonio Regional Labor Board conducted an election according to crafts which result in unanimous votes for the International Brotherhood of Machinists, Local No. 395, and for the International Brotherhood of Boiler Makers, Iron Ship Builders, Welders and Helpers of America, Local No. 597. The board ordered the company to recognize and deal with the Machinists and Boiler Makers' unions and gave the company 10 days to do so under penalty of losing the Blue Eagle and having the case referred to the Department of Justice. A complaint of the Federal labor union, a third organization in the plant, was dismissed on the ground that the group does not constitute a separate appropriate unit for the purpose of collective bargaining.

It was charged in the Ertel case that after the wage scale of employees had been reduced, Mr. Ertel declined to recognize or deal with the International Molders' Union which sought to have the scale restored and the strikers reinstated.

# United States Chamber of Commerce Flays Practically All New Deal Activity

ASHINGTON, May 7.-Reflecting the dominant tone of the entire meeting resolutions adopted by the Chamber of Commerce of the United States last Thursday as it ended its fourday annual session were sharply critical of New Deal legislation. Outstanding was a resolution of the Committee on Durable Goods which declared that the investment of the huge sums necessary to restore durable goods industries is being delayed because of existing laws and threatening legislation of a restrictive and destructive nature and fears of further intrusion of Government into the fields of private business.

Taking a broad sweep the resolutions assailed the Wagner labor disputes bill, the 30 hr. work week bill, NIRA social security legislation, securities control legislation, proposed amendments to the banking bill, the utilities holding company bill, amendments to the Agricultural Adjustment Act, etc. One New Deal program which was approved was reciprocal tariff bargaining.

Never before was the Chamber so vigorous in its condemnation of the Federal Administration. Coming on the eve of a presidential campaign, the attitude of the Chamber was given exceptional significance as to its political possibilities. It was widely interpreted as an open breach between busi-ness, as represented by the Chamber, and the Roosevelt Administration. This was accepted in certain Administration circles. One spokesman high in the councils of the Administration went so far as to say that "business men never really were for the Administration at any time " He predicted that they would be against the Administration next year, but, declaring that Democratic votes would from the plain people," he said President Roosevelt would be reelected by an overwhelming major-

# Some Dissenting Voices

There were, nevertheless, dissenting voices at the Chamber meeting. They felt that the New Deal had been unfairly and too broadly attacked. There were also views privately expressed off the convention floor that the Chamber itself was responsible in no small degree for Governmental regimentation of business. It was pointed out, for instance, that the Cham-

ber was most active in support of such laws as the recovery act, and that it should have known that in return for benefits business received it would be inevitably required to submit to wide Governmental control and that labor likewise would demand and obtain advantages.

Seeking to mollify the White House, because of the Chamber's action, a group of 23 members of the Business Advisory Council of the Department of Commerce called on the President after the resolutions were adopted and informed him they favored NRA extension and social security legislation. Included in the delegation, most of whom belong to the Chamber, was Henry I. Harriman, its retiring president, who presided at the convention when the condemnatory resolutions were adopted. Upon emerging from the White House conference, H. P. Kendall, chairman of the advisory council, de-clared that "there is no politics back of this report," which dealt with social security. He said the council "was here to uphold the President's hand in the fight against the depression." Certain members of the council, he pointed out, are members of the Chamber but were not spokesmen for it or any other organization. Secretary of Commerce Daniel C. Roper, who accompanied the delegation, said the council in a general way endorsed the social security program and its members "were delighted to tell the President they were for his program."

Harper L. Sibley, lawyer, banker, agriculturalist, of New York and Illinois, newly-elected president of the Chamber, said the Chamber resolutions were "very forward looking." Far from being "churlish," as they were dubbed by opponents at the meeting, Mr. Sibley said he felt they were not reactionary but that the Chamber had "simply expressed to the Administration in a polite way its differences of opinion." Mr. Sibley, schoolmate of President Roosevelt at Groton and Harvard, said he expected to take the resolutions to the White House next week and that he hoped there would be free discussion between representatives of the Government and of the Chamber. The opinion was expressed by Mr. Sibley that the resolutions did not represent so much opposition to the New Deal legislation as a feeling that too much had been attempted by the Government in too short a time.

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## Question Government's Haste

"We question the Government's haste," Mr. Sibley said, "and also its methods—to some extent."

Last year the President in his message to the Chamber told it to stop crying "wolf." This year he sent no message. This caused comment. The White House answer was that the President had not been asked to send a message. The President refused the Chamber's invitation to attend its dinner, it was stated, because of pressure of business and because he did not have anything to say on the business situation further than what he said in his recent radio broadcast.

Except for the resolutions on social security legislation and standards for highways and vehicles, the resolutions were adopted unanimously, although resentment was expressed toward the recovery act resolution. The latter was voiced by President Peter Van Horn, of the National Federation of Textiles. Inc., who threatened to withdraw his organization from the Chamber because of the latter's opposition to NRA as it is now constituted. Opposition on the Chamber floor to resolutions had not been present for several years.

The social security resolution as adopted carried an amendment submitted by George Houston, president, Baldwin Locomotive Works, which asked that all legislation on the subject be postponed until the next session of Congress. The original resolution was of the same nature except as to old-age pension legislation.

The amended resolution on social security said that if the provisions in the bill now pending should be adopted, the country should realize that within a decade there will be a tax burden amounting possibly to as much at \$1,000,-000,000 a year, borne equally by the States and the Federal Government. It was stated that the proposed payroll tax would impose a heavy burden upon industry and should not be considered until recovery is assured. The resolution also questioned the constitutionality of the legislation.

The resolution on the recovery act was simply a repetition of the position the Chamber has recorded with regard to that law, and is not expected to get serious attention at the hands of Congress which has an entirely different NRA proposal before it. The Chamber suggested that NRA be allowed to expire and that new legislation definitely limiting it as

to time be enacted. The resolution called for voluntary codes, with no provision for imposing or amending them by executive action. It was also proposed that the legislation should permit agreements between competitors, immune from the anti-trust laws, once Governmental approval had been given to the agreements.

The collective bargaining provisions of NIRA were assailed as having disproved their worth. It was further declared that efforts to enforce obedience to codes by extra-judicial methods, such as the Blue Eagle, withholding or withdrawal of Government contracts, and appeals to public prejudice, "are contrary to our national traditions." Despite the resolution as to collective bargaining, it was freely conceded that there is not the remotest possibility of withdrawal of this labor provision from legislation.

# White House Unperturbed

The White House did not like the wholesale condemnation directed at the New Deal by the Chamber, but, nevertheless, remained unperturbed. It held its fire. But it let go when members of the Business Advisory Council called upon the President shortly after the Chamber convention ended.

The President told the Council that organizations like the Chamber had always opposed every piece of social legislation ever attempted when he was a member of the New York State Legislature. The President bluntly stated he did not think business organizations of this character actually reflected the real views of individual business men. There certainly was no effort on the part of the President to heal the breach with the Chamber. Quite the contrary was true.

It was the President himself who reconstructed at a press conference what he told the Business Advisory Council. There were important sections of business who are utterly opposed to much of the New Deal legislative program which reacted favorably to his comeback at the Chamber. One of the principal fears of this section of business men was that the Chamber's position would insure more objectionable legislation — and provide additional votes for Mr. Roosevelt in his campaign for reelection.

# Labor Quick to Seize Opportunity

Organized labor, ever alert to the possibilities of political strategy, was quick to capitalize on the Chamber's action. Though it has frequently attacked New Deal policies bitterly and actually is now in revolt against the President's Automobile Labor Board, organized labor plumed itself in the robes of self-righteousness, went to the White House and told the President not to take the Chamber criticism too seriously.

The delegation was headed by President William Green of the American Federation of Labor and was supposedly for the purpose of discussing the automobile strike. Almost simultaneously, Charlton Ogburn. counsel for the United Automobile Workers, A. F. of L., affiliate, was issuing a statement that the strike at the Chevrolet plant in Toledo, Ohio, must be settled by a new automobile labor board and not by the Automobile Labor Board set up by the President himself. The Wolman board -the President's own board-organized labor has said is "washed up" and organized laboris "through with it." Boiled down, organized labor frequently defies the President, where it cannot have its own way, and recklessly foments industrial strife, but when much milder opposition develops to the President's program, as in the case of the Chamber action, organized labor rushes to "uphold the President."

The trick did not work in connection with the automobile strike situation. For the President declared that he did not propose to make a change in the set-up of the Automobile Labor Board. It is recalled that in the past organized labor has strongly attacked NRA. Unable to get the voice it sought on NRA or disappointed at labor board decisions, organized labor would come out with blasts virtually advocating that NRA be scrap-Now it has a member on the NIRB and is making headway toward additional representation, including the possibility of representation on code authorities.

Whereupon it came out for the Administration bill for two-year extension of NRA and assailed the Senate Finance Committee resolution to continue NRA only until next April. It, of course, has an eye on the Wagner labor disputes bill, evidently hoping its newly-developed support of the Administration will obtain White House approval. The implication of widespread strikes if the bill is not passed has been soft-pedaled.

# Code Exemption Granted — Other NRA News

ASHINGTON, May 7.—The NIRB has approved conditionally an exemption of the members of the reinforcing materials fabricating industry from the provisions of Article V, Section 10 of the code as they apply to wire mesh when sold in conjunction with reinforcing materials.

The purpose of the exemption is to relieve members of the industry manufacturing wire mesh from paying more than one code contribution. Previously these members of the industry have been paying contributions under the wire mesh and wire reinforcement industry codes as well as under their own code.

The exemption order becomes effective May 20, unless good cause to the contrary is shown. Suggestions or objections concerning the order must be submitted to Acting Division Administrator Robert N. Campbell, Room 702 Albee Building, prior to that date.

Industrial Supplies and Machinery Distributors: The NIRB has approved a revised definition of the term "trade" in the code of fair competition for the industrial supplies and machinery distributors' trade. The order of approval will become effective May 15, unless a subsequent order is issued. Suggestions or objections concerning the amendment may be submitted to Deputy Administrator F. A. Hecht, 721 Barr Bldg., 910 Seventeenth Street, N.W., before May 15. As amended Section 1, of Article II, defines the trade as "the warehousing, selling, distributing, and/or servicing in conjunction therewith of industrial tools, industrial equipment, and industrial supplies for railroads, ships, boats, mines, mills, factories, and/or for other industrial users, and/or for the Federal Government or for any State, county, municipality or other public authority, or any of their respective agencies or instrumentalities."

Non-Ferrous Foundry: The code authority for the non-ferrous foundry industry has applied for approval of the following addition to section 4 of the supplemental code for the aluminum permanent mold castings division: "No provision of this supplemental code shall be so construed as to hinder the development of new uses nor shall it apply to sales direct to the United States Government where inconsistent with Government purchase regulations."

Industrial Furnace Manufacturing: The NRA has approved an amendment to the code for the industrial furnace manufacturing industry, whereby industry membership on the code authority is increased from five to seven. One representative is to be chosen from each of the following recognized sections of the industry: Steel mill furnace, glass furnace, ceramic furnace, electric melting furnace, electric resistance furnace, combustion heat treating furnace and oven.

# NRA Future Not Settled by Senate Committee's Action for Extension

ASHINGTON, May 7.—
With the Supreme Court of
the United States taking
the Schechter Poultry Corpn. test
case under consideration, the Senate Finance Committee reporting
out a bill to continue NRA until
April 1, 1936, and leaders in the
House insisting upon the Administration's two-year extension measure, the future of the recovery
agency hangs in the balance.

The two arguments before the Supreme Court last week in the Schechter case centered around the vital points of delegation of legislative powers by Congress to the President and whether wages and hours can be controlled by the Federal Government under the commerce clause of the United States. Decision adverse to the Government would, in all probability, mean scrapping of NRA.

Industry generally, which favors extension of NRA, shares the view of the American Federation of Labor, as expressed in a letter from William Green to President Roosevelt, that the Clark resolution to continue NRA only until April 1 would amount to abandonment. He appealed to the President to stand firm for a two-year extension.

Meanwhile House leaders turned on the Finance Committee resolution and to the support of the Administration bill. Speaker Byrns said he doubted that the House would accept an eight or nine month extension of NRA and said he thought the Ways and Means Committee probably would prefer two years. If NRA is no good, he stated, it ought to be repealed, but if it is good it ought to be extended long enough to remove doubt. The Speaker declared that he has observed a change in sentiment about NRA even in his own district and that he gets letters from business men asking its extension.

Should the Finance Committee resolution be passed by the Senate and should the House hold fast to and pass the Administration bill, the tussle over NRA would have to go to conference and either the Senate or House be compelled to yield, unless a compromise of some kind were agreed upon.

Senator Pat Harrison, chairman of the Finance Committee, is expected to ask that the NRA joint resolution be taken up as soon as the Senate disposes of the soldiers' horus hill The resolution would greatly revise, and, in the opinion of NRA supporters, emasculate the present recovery act. It would bar price fixing, except in mineral natural resource industries, apply only to interstate commerce and authorize the President within 30 days to review or cause to be reviewed all codes and, if necessary, change their structure so as to comply with the resolution.

The difficulty of determining what constitutes price fixing and of defining interstate commerce immediately presented itself as a possibility that existing codes might be greatly modified, so much so that industries, with few exceptions, would no longer be interested in NRA.

The committee vote on the Clark resolution, 13 to 4, was taken on a day after Senators and Government officials had conferred with the President. The understanding was that the Administration would be successful in having the Finance Committee report out the Administration's two-year extension bill with amendments which previously had been drafted by Senator Harrison. The vote of the committee in favor of the Clark resolution, therefore, was a surprise, and even a shock, to Administration supporters, and was made especially so in view of approval of the resolution by Senator Harrison, who had been strongly supporting the Administration.

Senator Walsh, of Massachusetts, a member of the Finance Committee, voted for the Clark resolution but had unsuccessfully proposed elimination from the resolution of the clause removing all intrastate business from code regulation. He said this provision would mean a death blow to NRA.

In the arguments in the Schechter case, Attorneys Frederick H. Wood and Joseph Heller, both of New York, emphasized the contention that wages and hours provisions under the poultry code come strictly within intrastate regulation. On the other hand, Solicitor General Stanley Reed and Donald Richberg, chairman of the NIRB, appointed by the Department of Justice as an assistant attorney to argue the case, held that the wages and hours do affect interstate commerce as does the killing and sale of poultry and that therefore Congress had not delegated undue authority by which NRA assumed

jurisdiction over these matters. The lower court while sustaining conviction of the Poultry corporation on 17 of 19 counts of code violation, dismissed two counts, charging violation of wage and hour provisions. The lower court said that these provisions are beyond the power of Congress. The case was appealed as a test of NRA.

It now is a question as to when the Supreme Court will hand down its decision. In the event it does so before Congress adjourns or prior to June 16, when the present recovery act expires, it would be a guide to legislation for extension of NRA. But if it is extended before the decision is handed down it might be necessary greatly to revise the act again. It is also recognized that an adverse decision may so greatly affect the Recovery act as to make it lose its force and therefore leave the Administration no alternative except to scrap it.

# Opposes McReynolds Tin Conservation Bill

S. TRENCH & CO., INC., New York, characterizes the McReynolds Bill (HR7675), recently introduced in the House of Representatives, as threatening to place a heavy levy on all consumers of tin in this country, and as unjustified and unnecessary.

The company "can think of no useful purpose to be gained by spending a large sum of money trying to locate tin resources in the United States, which all the explorations and the surveys of the last half century have completely failed to uncover."

It considers neither "fair nor proper that tin users should be saddled with a processing tax of 6c. per lb. (on the basis of current consumption this would amount to between \$6,000,000 and \$7,000,000 a year) for creating and subsidizing a domestic tin smelting industry to treat foreign ores. That would not help to make us independent, for if a war ever prevented the import of metallic tin it would most certainly also prevent the import of tin ores or concentrates."

The company has issued a pamphlet setting forth its specific objections to the proposed bill.

Machinery & Welder Corpn., Chicago, will open branch at 1705 Baltimore Avenue, Kansas City, in charge of Albert W. Roth, as district manager, on May 15.

# Fabricated Structural Steel

Lettings Decline-New Projects Slightly Lower

ITH bookings mostly in small tonnages, the week's awards total only 10,200 tons, compared with 15,250 tons last week. A highway bridge at Sheffield, Ala., for the Tennessee Valley Authority, calling for 1635 tons, is the only letting of size. New projects of 6000 tons compare with 6850 tons last week and 12,250 tons two weeks ago. The largest new job reported is 1500 tons for the Westchester County Home at Eastview, N. Y. Plate awards account for 1520 tons. Structural steel awards for the week follow:

## NORTH ATLANTIC STATES

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Dighton, Mass., 210 tons, grandstand, to New England Structural Co.

Queens County, N. Y., 570 tons, highway bridge, to McClintic-Marshall Corpn.

New York, 115 tons, store buildings in Bronx, to Prudential Iron Works.

Greenport, N. Y., 240 tons, hospital building, to Berkshire Structural Steel Co.

Long Island Railroad, 540 tons, bridge over Laurelton Parkway, Long Island, to McClintic-Marshall Corpn.

LeRoy, N. Y., 250 tons, PWA grade crossing elimination project, Baltimore & Ohio Railroad, to Mount Vernon Bridge Co.

Jersey City, N. J., 290 tons, building for St. Peter's College, to Lehigh Structural Steel Co.

Creighton, Pa., 145 tons, storage building, to Pittsburgh Bridge & Iron Co.

Allegheny County, Pa., 150 tons, repairs to bridge at Neville Island, to Fort Pitt Bridge Works Co.

Baltimore, 285 tons, department store, to Belmont Iron Works.

Dover, N. J., 390 tons, building for Dover Boiler Works, to Bethlehem Fabricators, Inc.

# THE SOUTH

Williamsburg, Va., 120 tons, college building, to Standard Iron Works.

Tate County, Miss., 110 tons, bridge, to Virginia Bridge & Iron Co.

Sheffield, Ala., 1635 tons, highway bridge for Tennessee Valley Authority; 1370 tons to Mount Vernon Bridge Co., and 265 tons to Duffn Iron Works.

Lufkin, Tex., 150 tons, bridge, to Austin Brothers.

# CENTRAL STATES

State of Illinois, 380 tons, bridge, to Duffin Iron Works.

Chicago, 200 tons, International Printing Machine Co., to an unnamed bidder.

La Salle County, Ill., 140 tons, bridge, to Milwaukee Bridge Co.

Madison County, Ill., 315 tons, bridge, to Midland Structural Steel Co.

Belleville, Ill., 190 tons, State highway bridge, to Illinois Steel Bridge Co. Pontiac, Mich., 160 tons, train shed for General Motors Corpn., to Jones & Laugh-

lin Steel Corpn.

Cadott, Wis., 210 tons, State highway

Cadott, Wis., 210 tons, State highway bridge, to Fort Pitt Bridge Works Co. Milwaukee Road, 300 tons, bridge work,

to various bidders.

Hutchinson, Kan., 850 tons, bridge, to Kansas City Structural Steel Co.

Minneapolis, 600 tons, armory, to Minneapolis-Moline Power Implement Co. and Crown Iron Works.

# WESTERN STATES

Nampa, Idaho, 215 tons, subway for State grade crossing elimination, to American Bridge Co.

Boulder City, Nev., 150 tons, four overhead cranes, to Judson-Pacific Co.

Los Angeles, 600 tons, tunnel ribs for Metropolitan Water District, to Youngstown Steel Car Corpn. Boulder City, Nev., 1000 tons of steel castings for Paradox emergency gates, to Joshua Hendy Iron Works.

Long Beach, Cal., 220 tons, addition to Polytechnic high school, to Consolidated Steel Corpn.

Huntington Park, Cal., 120 tons, high school gymnasium, to Minneapolis-Moline Power Implement Co.

Los Angeles, 200 tons, Lowell junior high school, to Pacific Iron & Steel Co.

Bonneville, Ore., 140 tons, tower at Bonneville dam, to Washington Iron Works.

# NEW STRUCTURAL STEEL PROJECTS

## NORTH ATLANTIC STATES

Eastview, N. Y., 1500 tons, Westchester County Home.

Greene County, N. Y., 500 tons, bridge; to be readvertised.

Olean, N. Y., 800 tons, school.

## THE SOUTH

Athens, Ala., 670 tons, Elk River bridge for Tennessee Valley Authority.

Sheffield, Ala., 200 tons, cranes. New Orleans, 560 tons, bridge.

## CENTRAL STATES

Toledo, Ohio, 450 tons, shop building for National Superior Co.; bids May 10.

Lorenzo, Ill., 110 tons, bridge; Schmitt Construction Co. low bidder.

State of Wisconsin, tonnage not stated, about 100, overhead crossings.

State of Minnesota, tonnage not stated, about 80 overhead crossings.

Rochester. Minn., 300 tons, power house.

## WESTERN STATES

Hollywood, Cal., 400 tons, sound stage for Warner Brothers; bids opened May 8.

North Hollywood, Cal., 100 tons, post office; bids rejected.

Chelan County, Wash., 140 tons, State bridge over Wenatchee River; bids May 21.

Tacoma, Wash., 210 tons, State undercrossing.

## FABRICATED PLATE

## AWARDS

Chattanooga, Tenn., 185 tons, repairs to gas holder of United Power & Light Co., to Stacey Brothers Gas Construction Co.

Vicksburg, Miss., 1060 tons, 71 dredge pontoons for United States Engineers, to St. Louis Shipbuilding & Steel Co.

## NEW PROJECTS

Agricola, Ga., 275 tons, tank.

## SHEET PILING

Spokane, Wash., 125 tons, for city dam; plans being completed.

# Reinforcing Steel

Awards 2040 Tons—New Projects 3100 Tons

# AWARDS

East Boston, 700 tons, grandstand, to Concrete Steel Co.

Zanesville, Ohio, 580 tons, Beach City dam for Muskingum District Conservancy project, to American Rolling Mill Co.

Maricopa County, Ariz., 450 tons, Maricopa County Municipal Water Conservation District; 300 tons to Pratt-Gilbert Hardware Co., 100 tons to Allison Steel Co.

San Diego, Cal., 100 tons, Government exposition building, to an unnamed bidder.

San Francisco, 210 tons, Francis Scott School, to Soule Steel Co.

# NEW REINFORCING BAR PROJECTS

Wende, N. Y., 100 tons, tunnel for Erie County penitentiary.

Buffalo, tonnage unstated, grade crossing elimination at Williams and Ogden Streets for Eric Railroad; bids May 14.

Washington, 500 tons for Panama Canal; bids May 16.

Zanesville, Ohio, 108 tons, Leesville dam in connection with Muskingum District Conservation project; bids May 24.

Zanesville, 565 tons, Wills Creek, Tappan, Charles Mill and Clendening dams in connection with Muskingum Conservation District; bids taken.

Chicago, 880 tons, Armour & Co.; bids submitted May 6.

Chicago, 100 tons, Division J, Sanitary District.

Lake Forest, Ill., 100 tons, sewage project

State of Illinois, 1000 tons, road and bridge work.

San Francisco, 104 tons, girls' high school; bids rejected on general contract and new bids will be taken.

Berkeley, Cal., 285 tons, State grade separation at Folger Avenue; bids May 22.

# Enamel Institute to Meet at Cleveland

THE Porcelain Enamel Institute, Chicago, will hold its annual meeting in Cleveland, at the Statler Hotel, May 22. At this meeting will be displayed the institute's advertising and sales promotion campaign and the basis for market and technical research.

Of special interest will be a typical store demonstration exhibit, which consists of a portable furnace placed before an array of such porcelain enameled products as an electric refrigerator, gas stove, electric range, clothes and dish washers, steel tile, kitchenware, commercial signs, with porcelain enameled reflectors, used to floodlight this exhibit. The furnace will be in operation, enameling souvenir ash trays on which visitors may write their names before the firing process, resulting in a permanent souvenir bearing the recipient's own signature.

# Blast Furnace Development In Pennsylvania Traced

HE past, present and future development of the blast furnaces of Pennsylvania was discussed at a one-day metallurgical conference at Pennsylvania State College, State College, Pa., on Friday, May 3, as a part of a series of conferences held each year by the school of mineral industries, in charge of Dr. D. F. McFarland, head, department of metallurgy.

The charcoal iron period was described by Major Hugh Laird Curtin, Curtin, Pa., who ran the last charcoal blast furnace in Pennsylvania. His paper, entitled "Eagle Furnace, 1817-1921 — a

Typical Cold-Blast Charcoal Iron Blast Furnace," was well illustrated with pictures of a furnace that ran for over a century making a pig iron that cannot be equaled as to quality by any other process.

"Pennsylvania's Leadership in the Mineral Fuel Era of Blast Furnaces," by Ralph H. Sweetser, New York, described the revolutionary blast furnace practice that came with the introduction of mineral fuels—anthracite, block coal, and coke, just a hundred years ago. The great bulk of raw materials used in the early anthracite furnaces, 2 to 3 tons of ore, 2 or more tons of anthracite and a ton and a half of limestone, and the *pumping* of 20 tons of air-blast, were noted by Mr. Sweetser. He mentioned the beneficiation of the air blast so as to get rid of some of the 79 per cent of nitrogen, and spoke of a paper just published in *Mining and Metallurgy* on the subject of low-cost oxygen for metallurgical purposes.

In the discussion that followed, the majority of the speakers spoke unfavorably of such practice, chiefly because oxygen would cost too much. Arthur G. McKee, president, Arthur G. McKee Co., Cleveland, led the opposition. A few speakers brought out the possibility that less nitrogen in the blast meant more oxygen with less volume of blast, thereby gaining some of the advantages developed by slack-wind blowing.

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R. A. Field, superintendent of blast furnaces, Aliquippa plant of Jones & Laughlin Steel Corpn., gave a brief description of the handling of the big-hearth furnaces under slack-wind practice and under normal conditions. The furnace men had many questions to ask, especially as to whether one big furnace was as satisfactory as two smaller ones.

At the dinner meeting that evening Arthur G. McKee gave an informal talk on "Some Observations Regarding Blast Furnace Designe"

Blast furnace men from all parts of Pennsylvania, Ohio, Maryland and New York were there, with a total attendance of about 75.

Editor's Note: This is a series of observations which, strangely enough, are exactly what they purport to be. In other words, they come from the daily diary of a real boss; a prominent executive in the metal-working industry who prefers to remain an anonymous author.

# The Boss's Diary

It isn't all pie and skittles to be called an authority. When well=meaning but mistaken friends have called me that or occasions I have always shuddered. It would seem that a guy should get all puffed up over being called an authority.

Last night I listened to a lecturer. Maybe I found out why the term "authority" is so unlikeable to me. The lecturer said that an authority is an expert on what has already happened. A little experience, a bit of memory, a touch of the ability to observe, the gymnastic ability of Lot's wife to look back—and you have an authority.

I wonder whether I'm not afraid of being called a droning, drab, dependable, stable authority or if I'm getting too much kick out of wondering what's going to happen around the corner, what the next five minutes will produce rather than what the last five minutes did provide or how the scenery looks beyond the far hills. There's danger in them than hills, but there's lots of fun too!

# Railroads Spend 160 Millions for Steel

LASS I railroads bought \$159,-758,000 worth of iron and steel products in 1934, an increase of \$49,038,000 compared with the amount of such purchases in 1933. For new and second hand steel rails, the railroads paid \$31,107,-000 while in 1933, the corresponding amount was \$11,835,000. For track materials such as fastenings, bolts, spikes, tie plates, rail anchors, frogs, switches and crossings, the railroads expended \$31,-283,000 in 1934 compared with They also \$16,691,000 in 1933. purchased locomotives and car castings, beams, couplers, frames and car roofs costing \$24,583,000 compared with \$18,562,000 in the preceding year.

# April Pig Iron Output Off 2.9 Per Cent

PRODUCTION of coke pig iron in April totaled 1,-663,475 gross tons, compared with 1,770,028 tons in March. The daily rate in April, at 55,449 tons, decreased 2.9 per cent from the March rate of 57,098 tons a day.

There were 97 furnaces in blast on May 1, making iron at the rate of 53,555 tons a day, against 98 furnaces on April 1, operating at the rate of 57,295 tons a day. Four furnaces were blown in during the month and five were blown out or banked. The Steel Corporation blew in two and took one off blast, and independent steel companies blew two in and blew out or banked four furnaces.

Among the furnaces blown in were the following: One Susquehanna, National Steel Corpn.; one Aliquippa, Jones & Laughlin Steel Corpn.; one Monongahela, National Tube Co., and one Mingo, Carnegie Steel Co.

Furnaces blown out or banked included: Two Cambria, Bethlehem Steel Co.; one Campbell, Youngstown Sheet & Tube Co.; one Zug, National Steel Corpn., and one Fairfield, Tennessee Coal, Iron & Railroad Co.

The total number of potentially active furnaces has been reduced to 271 by the abandonment and scrapping of the Marietta furnace of the Lavino Furnace Co.

# Daily Average Production of Coke Pig Iron

	Chross	1048		
	1935	1934	1933	1932
January	47,656	39,201	18,348	31,380
February	57,448 57,098	45,131 52,243	19,798	33,251
April	55,449	57,561	20.787	28,430
May		65,900	28,621	25,276
June		64,338	42,166	20,935
½ year		54,134	24,536	28,412
July		39,510	57,821	18,461
August		34,012	59,142	17,115
September		29,935 30,679	50,742 43,754	19,753 20,800
November		31,898	36.174	21,042
December		33,149	38,131	17,615
Year		43,592	36,199	23,733

# Production of Coke Pig Iron and Ferromanganese

	Pig :	Iron*	Ferroman	nganeset
	1935	1934	1935	1934
January February March April May	1,477,336 1,608,552 1,770,028 1,663,475	1,215,226 1,263,673 1,619,534 1,726,851 2,042,896	10,048 12,288 17,762 18,302	11,703 10,818 17,605 15,418 10,001
June		1,930,133		10,097 75,642
July August September October November December		1,224,826 1,054,382 898,043 951,062 956,940 1,027,622		10,188 8,733 7,100 9,830 8,134 4,563
Year		15,911,188		124,190

\*These totals do not include charcoal pig iron. The 1933 production of this iron was 32,941 gross tons. †Included in pig iron figures.

# Merchant Iron Made, Daily Rate

	Ton	8		
	1935	1934	1933	1932
January		7,800	2,602	6,256
February	6,288	7,071	2,863	7,251
March		7,197	2,412	7,157
April		8,838	1,908	5,287
May		9,099	3,129	4,658
June		9,499	4,088	6,090
July		7,880	6,783	3,329
August		6,043	7,756	3,070
September		4,986	10,034	3,213
October		5,765	8,634	4,286
November		6,610	7,639	4,435
December		4,399	8,358	3,674

# Production by Districts and Coke Furnaces in Blast

		uction Tons)	М	ay 1	Apr	11 1
Furnaces	April (30 Days)	March (31 Days)	Number in Blast	Operating Rate, Tons a Day	Number in Blast	Operating Rate, Tons a Day
New York:						
Other New York and Mass.	106,617 $5,230$	105,539 6,194	6	3,555 175	5	3,405 200
Pennsylvania:						
Lehigh Valley Schuylkill Valley Susquehanna and Lebanon	$\frac{32,212}{8,020}$	29,791	3	1,075 265	3	1,015 265
Valleys	11,415	6,790	1	380	1	485
Ferromanganese Pittsburgh District. Ferro, and Spiegel. Shenango Valley. Western Pennsylvania. Ferro, and Spiegel. Maryland Wheeling District.	283,935	334,740 8,132 34,881 43,521 6,530 71,987 128,793	18 2 2 1 1 3	10,275 305 1,185 530 205 2,615 3,900	0 16 2 2 3 1 3 6	11,140 285 1,125 1,405 210 2,320 4,155
Ohio:						
Mahoning Valley. Central and Northern. Southern Illinois and Indiana Mich. and Minn. Colo., Mo. and Utah.	182,199 173,880 35,703 340,053 50,312 17,921	204,222 $197,121$ $38,240$ $338,517$ $54,539$ $22,628$	8 10 3 16 2	5,180 5,795 1,190 11,335 1,150 595	9 10 3 16 3	5,895 5,855 1,235 11,360 1,760 730
The South:						
Virginia Ferro, and Spiegel. Kentucky Alabama Tennessee	3,069 14,042 114,824	3,100 14,845 119,918	0 1 1 8 0	100 470 3,275	0 1 1 9 0	100 480 3,870
Total	1,663,475	1,770,028	97	53,555	98	57,295

# Welding Group Holds First Meeting

RGANIZATION of the Milwaukee section of the American Welding Society was further completed at the first meeting of the section, held April 18, at the Milwaukee School of Engineering. Officers were elected as follows: Otto C. Voss, Allis-Chalmers Mfg. Co., chairman; K. L. Hansen. Harnischfeger Corpn., vice-chairman; and J. J. Chyle, A. O. Smith Corpn., secretary-treasurer.

Speakers at the meeting included R. F. Helmkamp, Air Reduction Sales Co., on "Advances in Machine Construction by Gas Cutting and Welding"; J. R. Houston, Harnischfeger Corpn., on "Qualifying Welding Operators"; and A. Stemper, United Air Lines, who showed a two-reel film entitled "Across the Continent in 18 Hours." The session was well attended and definite plans were made for future meetings of the section.

# Current Metal Working Activity Statistically Shown

These Data Are Assembled By THE IRON AGE From Recognized Sources And Are Changed Regularly As More Recent Figures Are Made Available. Boldface Type Indicates Changes This Week

Raw Materials:	March, 1935	February, 1935	March, 1934	Three Months, 1935	Three Months, 1934
Lake ore consumption (gross tons) <sup>a</sup>	2,582,968 <b>3,012,692</b>	2,467,269 2,873,432	2,189,566 3,129,973	7,319,780 8,775,676	5,573,615 8,336,252
Pig Iron:					
Pig iron output—monthly (gross tons)* Pig iron output—daily (gross tons)*	1,770,028 57,098	1,608,552 57,448	1,619,534 52,243	4,862,916 <b>54,032</b>	4,098,433 <b>45,381</b>
Castings:					
Malleable castings—production (net tons) <sup>4</sup> Malleable castings—orders (net tons) <sup>4</sup> Steel castings—production (net tons) <sup>4</sup> Steel castings—orders (net tons) <sup>4</sup>	42,808 40,237 31,940 30,723	41,377 41,225 29,687 31,725	43,438 42,961 39,491 60,046	127,585 126,030 90,662 94,797	107,794 112,056 95,661 122,040
Steel Ingots:					
Steel ingot production—monthly (gross tons) Steel ingot production—daily (gross tons) Steel ingot production—per cent of capacity	2,830,700 108,873 49.18	2,742,125 114,255 51.61	2,761,438 102,275 46.45	8,406,995 109,182 49.32	6,915, <b>785</b> <b>88</b> ,664 40.27
Employment in Steel Industry:					
Total employees*	425,189 46,765 33.9	420,397 44,213 35.6	419,277 41,263 33.3	417,552 135,306 34.4	405,196 112,566 32.4
Finished Steel:					
Trackwork shipments (net tons)*	193,057 227,082 <b>99,327</b> <b>82,410</b> <b>16,832</b> 17,335	2.892 184.355 219,062 70,980 65,430 15,064 22,265	4,446 158,244 220,282 105,537 65,728 38,924 19,300	698,210 681,858 230,558 233,995 50,674 55,200	10,597 552,062 578,734 272,425 170,860 69,462 51,300
U. S. Steel Corpn. shipments (tons) <sup>b</sup>	668,056 75,072	583,137 64,369	588,209 47,897	1, <b>785,348</b> 192,097	1, <b>305,486</b> 106,379
Fabricated Products:					
Automobile production U. S. and Canada <sup>44</sup> Construction contracts (37 Eastern States) <sup>1</sup> Steel barrel shipments (number) <sup>4</sup> . Steel furniture shipments <sup>4</sup> . Steel boiler orders (sq. ft.) <sup>4</sup> . Locomotive orders (number) <sup>1</sup> . Freight car orders (number) <sup>1</sup> . Machine tool index <sup>1</sup> . Foundry equipment index <sup>11</sup> .	451,805 \$123,043,500 \$1,220,533 655,812 8 0 62,3 69,3	358,658 \$75,047,400 402,928 \$1,064,219 281,646 1 806 53.0 75.7	345,443 \$178,345,800 703,101 \$955,633 375,774 3 522 48.1 75.4	\$3,424,249 1,329,242 9 830 160.3 177.2	749,532 \$461,525,800 1,982,362 \$2,846,547 838,643 23 20,899 †50.9 †59.5
Foreign Trade:					
Imports of pig iron (gross tons)	2,708 11,355 78,483 68,146 232,967	10,741 11,024 67,329 59,147 156,332	20,674 6,799 84,515 80,320 173,165	15,482 36,559 219,208 193,816 575,411	43,337 20,436 243,055 228,889 336,321
British Production:					
British pig iron production (gross tons)* British steel ingot production (gross tons)*	553,200 841,900	483,100 769,500	503,600 834,500	1,557,500 2,369,200	1,359,300 2,253,000
Non-Ferrous:					
Lead production (net tons)*.  Lead shipments (net tons)*.  Zinc production (net tons)*.  Zinc shipments (net tons)*.  Deliveries of tin (gross tons)*.	32,558 28,960 36,216 41,137 5,495	27,495 32,523 33,072 34,903 3,905	35,502 30,321 33,845 32,877 3,835	89,367 95,178 104,902 111,578 14,000	106,421 90,010 97,218 92,018 10,085
*Preliminary, †Three Months' Average.					

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\*Preliminary. †Three Months' Average.
Sources of figures: \*Lake Superior Iron Ore Association; b Bureau of Mines: \*The Iron Age; b Bureau of the Census; d When preliminary, from Automobile Manufacturers' Association—Final figures from Bureau of the Census; American Iron and Steel Institute; National Association of Flat-Rolled Steel Manufacturers; American Institute of Steel Construction; United States Steel Corpn.; b U. S. Engineer, Pittsburgh; F. W. Dodge Corpn.; callway Age; National Machine Tool Builders Association: Foundry Equipment Manufacturers Association; Department of Commerce; British Iron and Steel Federation; American Bureau of Metal Statistic American Zinc Institute, Inc.; New York Commodities Exchange.

# Steel Output Is Off But Scrap Is Stronger

Settlement of Automobile Strike May Bring Rebound in Orders But General Trend of Production Appears to Be Downward

STEEL output, feeling the effects of the Chevrolet strikes, has declined from 46 to  $45\frac{1}{2}$  per cent of capacity. The recession was particularly marked in the Cleveland-Lorain area, where production fell three points to 45 per cent, following a four-point drop in the previous week. This setback was partly offset by a  $1\frac{1}{2}$ -point gain at Chicago and a three-point increase in Buffalo.

While the rise at Chicago is regarded as temporary, being attributable to the bunching of releases against structural contracts, early settlement of automotive labor troubles will doubtless bring a rebound of orders now under suspension. What the net result will be is uncertain, though the steel trade still looks for a gradual falling off in its activities, notwithstanding an unexpected showing of strength by the scrap market.

AUTOMOBILE makers are now swinging to a policy of reducing inventories in preparation for slow midsummer schedules. Retail demand for motor vehicles is holding up remarkably well, but the used car market is glutted and may soon affect the sale of new cars. Output of seasonal farm implements is beginning to drop off, yet tractor makers continue to operate full tilt in a vain effort to overtake demand. Tin plate production is up slightly, at between 80 and 85 per cent, and tubular goods are moving in slightly larger volume than in April or March. But support from the construction industry remains far below normal pending the launching of new works relief projects, and railroad buying is still light on the average, despite the occasional placing of sizable orders for rails and equipment.

NAIL purchases happen to be conspicuous among the tonnage awards of the week. The Erie placed 16,880 tons of rails and 5235 tons of track material, and the Akron, Canton & Youngstown ordered 7600 tons of rails.

Structural steel lettings of 10,200 tons compare with 15,250 tons in the previous week. Awards to date this year, at 256,988 tons, compare with 304,395 tons on the corresponding period in 1934.

SCRAP, the industry's most sensitive barometer, is stronger in the face of indications of a further slowing up of mill operations. Heavy melting steel, on the strength of increases at Chicago and Philadelphia, has risen from \$10.42 to \$10.58 a gross ton. This is the second consecutive advance in The Iron AGE scrap index and is ascribable in part to heavier export demand, although this explanation does not hold good for the Chicago district.

Unless scrap prices continue to rise, current talk of a 50c. a ton increase in pig iron prices for third quarter is likely to be without results. While the freight surcharge has raised raw material costs at furnaces, producers are aware that higher pig iron prices might cause further expansion of the use of scrap as a substitute for virgin metal. The filing of third quarter prices on finished steel will also probably be a mere formality, as it is generally conceded that present base prices, in most instances, will be reaffirmed.

A STRIKE called in the upper Michigan iron mines may extend to the Mesabi range, but in view of large existing stock piles, the flow of ore is not likely to be affected. Ford Motor Co. has bought 180,000 tons of ore.

The truce in the bituminous coal industry expires June 16 and, though renewed trouble threatens, few buyers have any need to make protective purchases.

Great Britain has reached an agreement with the Continental Steel Cartel under which it will reduce duties for three months for the importation of a restricted tonnage of cartel products.

THE IRON AGE composites for finished steel and pig iron are unchanged at 2.124c. a lb. and \$17.90 a ton respectively.

# A Comparison of Prices

Market Prices at Date, and One Week, One Month, and One Year Previous Advances Over Past Week in Heavy Type, Declines in Italics

Pig Iron					Finished Steel	May 7, 1935	Apr. 30, 1935	Apr. 9, 1935	May 8, 1934
	May 7, 1935	Apr. 30, . 1935	Apr. 9, 1935	May 8, 1934	Per Lb.:	Cents	Cents	Cents	Cents
No. 2 fdy., Philadelphia			20.26	\$20.26	Hot-rolled annealed sheets,				
No. 2. Valley furnace		18.50	18.50	18.50	No. 24, Pittsburgh	2.40	2.40	2.40	2.65
No. 2 Southern, Cin'ti		19.13	19.13	19.13	Hot-rolled annealed sheets,	2.50	2.50	2.50	2.75
No. 2. Birmingham†		14.50	14.50	14.50	No. 24, Gary	3.10	3.10	3.10	3.25
No. 2 foundry, Chicago*		18.50	18.50	18.50	Sheets, galv., No. 24, P'gh	3.20	3.20	3.20	3.35
Basic, del'd eastern Pa		19.76	19.76	19.76	Sheets, galv., No. 24, Gary Hot-rolled sheets, No. 10, P'gh		1.85	1.85	2.00
Basic, Valley furnace		18.00	18.00	18.00	Hot-rolled sheets, No. 10, Gary		1.95	1.95	2.10
Valley Bessemer, del'd P'gh		20.76	20.76	20.76	Wire nails, Pittsburgh	2.60	2.60	2.60	2.60
Malleable, Chicago*		18.50	18.50	18.50	Wire nails, Chicago dist. mill.		2.65	2.65	2.65
Malleable, Valley		18.50	18.50	18.50	Plain wire, Pittsburgh	2.30	2.30	2.30	2.30
L. S. charcoal, Chicago			24.04	24.04	Plain wire, Chicago dist. mill.	2.35	2.35	2.35	2.35
Ferromanganese, seab'd car-					Barbed wire, galv., P'gh.	3.00	3.00	3.00	3.00
lots	85.00	85,00	85.00	85.00	Barbed wire, galv., Chicago		4.55	4,00	0.00
		and a large	b - N'	th mains	dist, mill		3.05	3.05	3.05
†This quotation is for deliver are 38c. a ton under delivered qu					Tin plate, 100 lb, box, P'gh		\$5,25	\$5,25	\$5.25
furnace.  *The switching charge for de									
cago district is 60c. per ton,	envery	to round	ries in	the Chi-	6				
					Scrap				
					Per Gross Ton:				
Rails, Billets, etc.					Heavy melting steel, P'gh	\$11.50	\$11.50	\$11.50	\$13.25
Per Gross Ton:					Heavy melting steel, Phila	10.25	10.00	10.00	11.25
Rails, heavy, at mill	296 9714	896 971/6	96 991	292 971	Heavy smelting steel, Ch'go	10.00	9.75	9.75	11.25
Light rails, Pittsburgh		35.00	35,00	35,00	Carwheels, Chicago	10.50	10.50	10.50	11.50
Rerolling billets, Pittsburgh		27.00	27.00	29.00	Carwheels, Philadelphia	11.25	11.25	11.25	12.75
Sheet bars, Pittsburgh		28.00	28.00	30.00	No. 1 cast, Pittsburgh	12.75	12.25	12.25	13.25
Slabs, Pittsburgh		27.00	27.00	29.00	No. 1 cast, Philadelphia	11.25	11.00	11.00	12.50
Forging billets, Pittsburgh		32.00	32.00	34.00	No. 1 cast, Ch'go (net ton)	9.00	9.00	9.00	9.25
Wire rods, Pittsburgh		38.00	38.00	38.00	No. 1 RR. wrot., Phila	10.25	10.25	10.75	12.50
The total and th	Cents	Cents	Cents	Cents	No. 1 RR. wrot., Ch'go (net).	8.00	8.00	8.00	9.00
Skelp, grvd. steel, P'gh, lb		1.70	1.70	1.70					
					C   C				
					Coke, Connellsville				
Finished Steel					Per Net Ton at Oven:				
Per Lb.:	Cents	Cents	Cents	Cents	Furnace coke, prompt		\$3,85	\$3.85	\$3.85
Bars, Pittsburgh		1.80	1.80	1.90	Foundry coke, prompt	4.60	4.60	4.60	4.60
Bars, Chicago	1.85	1.85	1.85	1.95					
Bars, Cleveland	1.85	1.85	1.85	1.95					
Bars, New York	2.15	2.15	2.13	2.23	Metals				
Plates, Pittsburgh	1.80	1.80	1.80	1.85	Per Lb. to Large Buyers:	Cents	Cents	Cents	Cents
Plates, Chicago	1.85	1.85	1.85	1.90	Electrolytic copper, refinery:		8.75	8.75	8.25
Plates, New York		2.0926	2.08	2.13	Lake copper, New Yorki				
		1.80	1.80	1.85	Tin (Straits), New York		50.75	49.25	54.05
Structural shapes. Pittshurgh	2.00			1.90	Zinc, East St. Louis		4.10	4.00	4.35
Structural shapes, Pittsburgh. Structural shapes, Chicago	1.85	1.85			easing land of landing				E + 10 EF
Structural shapes, Chicago		1.85	1.85		Zine New York				4.70
Structural shapes, Chicago Structural strips, New York .	2.0625	2.06317	5 2.05 3	4 2.10 1/4	Zinc, New York	4.57 1/2	4.45	4.35	4.70
Structural shapes, Chicago Structural strips, New York. Cold-finished bars, Pittsburgh	2.0625 1.95	2.06317 1.95	5 2.05 h 2.10	4 2.10 ¼ 2.10	Lead, St. Louis	4.57 ½ 3.60	4.45 3.60	$\frac{4.35}{3.50}$	4.10
Structural shapes, Chicago Structural strips, New York .	2.0625 1.95 1.85	2.06317	5 2.05 3	4 2.10 1/4		4.57 ½ 3.60 3.75	4.45	4.35	

On export business there are frequent variations from the above prices. Also, in domestic business, there is at times a range of prices on various products, as shown in our detailed price tables. ‡Blue Eagle copper.

	The Iron Ag	e Composite Price	2S	
	Finished Steel	Pig Iron	Steel Scrap	
May 7, 1935 One week ago One month ago One year ago	2.124c. a Lb. 2.124c. 2.124c. 2.199c.	\$17.90 a Gross Ton 17.90 17.90 17.90	\$10.58 a Gross Ton 10.42 10.42 11.92	
	Based on steel bars, beams, tank plates, wire, rails, black pipe, sheets and hot-rolled strips. These products make 85 per cent of the United States output.	Based on average of basic iron at Valley furnace and foundry irons at Chicago, Philadelphia, Buffalo, Valley and Birmingham.	Based on No. 1 heavy melting steel quotations at Pittsburgh, Philadelphia and Chicago.	
	High Low	High Low	High Low	
1935 1934 1933 1932 1931 1930 1929 1928 1927	2.124c., Jan. 8; 2.124c., Jan. 8 2.199c., April 24; 2.008c., Jan. 2 2.015c., Oct. 3; 1.867c., April 18 1.977c., Oct. 4; 1.926c., Feb. 2 2.037c., Jan. 13; 1.945c., Dec. 29 2.273c., Jan. 7; 2.018c., Dec. 9 2.317c., April 2; 2.273c., Oct. 29 2.286c., Dec. 11; 2.217c., July 17 2.402c., Jan. 4; 2.212c., Nov. 1	\$17.90, Jan. 8; \$17.90, Jan. 8 17.90, May 1; 16.90, Jan. 27 16.90, Dec. 5; 13.56, Jan. 3 14.81, Jan. 5; 13.56, Dec. 6 15.90, Jan. 6; 14.79, Dec. 15 18.21, Jan. 7; 15.90, Dec. 16 18.71, May 14; 18.21, Dec. 17 18.59, Nov. 27; 17.04, July 24 19.71, Jan. 4; 17.54, Nov. 1	\$12.33, Jan. 8; \$10.33, April 23 13.00, Mar. 13; 9.50, Sept. 25 12.25, Aug. 8; 6.75, Jan. 3 8.50, Jan. 12; 6.43, July 5 11.33, Jan. 6; 8.50, Dec. 29 15.00, Feb. 18; 11.25, Dec. 9 17.58, Jan. 29; 14.08, Dec. 3 16.50, Dec. 31; 13.08, July 2 15.25, Jan. 11; 13.08, Nov. 22	

# Steel Ingot Production Holding at Pittsburgh



Output in Valleys and at Wheeling Also Unchanged With Further Curtailment Likely to Be Checked by Strike Settlement

PITTSBURGH, May 7.— Finished steel demand is displaying mixed tendencies in this district. Some producers report fewer orders with heavier aggegate tonnage, while others report a decline in new bookings. The net result shows little or no change in general activity here.

A ray of cheer was provided this morning by the placing by the Erie Railroad of 10,000 tons of rails with the local rail mill, which probably will begin rolling on the order within a short time. Another favorable turn is the easing of the labor situation in the automotive industry, which had begun to take its toll on steel order books. Barge inquiry reaching this district is improved.

While finishing mill schedules have been more sensitive to recent influences, steel ingot output in the Pittsburgh district continues its unbroken record of 35 per cent for eight consecutive weeks. Ingot production in the Valleys and nearby northern Ohio mills is holding at 51 per cent. Output in the Wheeling district also is maintained at 77 per cent.

Sheet mill schedules, which began the week at around 60 per cent, may rebound with the probable lifting of shipping suspensions traceable to automotive labor troubles. Tin plate production this week is slightly increased at between 80 to 85 per cent. Strip production is averaging around 50 per cent.

With no unfavorable contingencies arising, the filing of third quarter prices on May 21 probably will be a formality, as it is generally conceded that present base prices will be reaffirmed in most instances.

# Pig Iron

Early May demand is holding at the rather moderate pace established in April. Buying continues almost entirely on a car-lot basis. Effective May 6, the emergency freight surcharges became applicable to intrastate movement in Pennsylvania.

# Semi-Finished Steel

Detached mills serving the automotive industry are becoming cautious in purchasing sheet bars and forging stock, but thus far the labor troubles at motor car centers have not actually affected the aggregate movement of these grades. Skelp continues to move steadily, while wire rods are not losing ground. Fluctuation in the movement of sheet bars to non-integrated tin plate mills is becoming more marked, with the general trend slightly downward.

# Rails and Track Accessories

The Akron, Canton & Youngstown Railroad has placed 7600 tons of rails with the local producer. Other track business in this district is still greatly restricted, with miscellaneous trackt work needs representing the chief demand.

# Bolts, Nuts and Rivets

Discounts are being maintained in this district, but some irregularities are reported in consuming centers farther inland. No open breaks have occurred to unsettle the whole market, and important producers are adhering quite uniformly to present discount cards. General demand is extremely sluggish, and scattered price concessions are not proving to be inducements to increased buying.

# **Plates and Shapes**

Current barge inquiry promises a fair movement of plates this spring. Several inquiries for coal and oil barges are being figured, while the American Oil Co.'s prospective request for bids on all welded oil barges and storage tanks probably will mean a total plate requirement of several thousand tons. Bids opened last week at the United States Engineer's Office, Vicksburg, Miss., revealed St. Louis Shipbuilding Co. as low bidder on 60 steel pontoons, with an alternate

bid on 11 additional pontoons, the construction of which will require approximately 900 tons of plates and shapes.

The number of structural steel awards is running well ahead of new inquiries. Fresh specifications reported in this district are extremely limited, the only sizeable item being a projected county home at Eastview, N. Y., which will require 1500 tons. Fabricated structural steel plants in the Pittsburgh area have made sharp inroads in their backlogs, and current schedules average about 30 per cent. Although the base price for plain material is holding by virtue of code price provisions, price conditions in the fabricated structural market are rather chaotic, with concessions in increasing evidence.

# Reinforcing Steel

Activity in this market centers almost entirely on public works projects, which are characteristically slow in maturing. The spring road-building campaigns have not provided the usual support to reinforcing mills, owing largely to the deferment of many such programs until allocations against the Federal works relief bill are made.

## **Cold Finished Bars**

Demand last week was only slightly affected by labor difficulties in the automotive industry. Unless the strikes are settled promptly, however, cold finished producers predict an early drop in automotive specifications. Meanwhile the general trend in consumer demand is steady, with farm implement makers still a supporting influence. The jobbing trade is piecing out stocks more freely, but the net result is to add little tonnage to mill order books.

## **Tubular Products**

April shipments barely exceeded March tonnage. Demand in the first few days of May has pointed slightly higher, with improvement noticeable in calls for oil country goods. Drilling in most important oil fields has not increased markedly, but prospects for drilling on the scale planned earlier this year are shaping up more favorably. Strikes at Toledo and Norwood have not yet seriously affected orders for mechanical tubing. Boiler tubes and locomotive tubing are moving in small volume. Tube mills in this district are not averaging better than 45 per cent. A slight upward revision in quantity extras on seamless boiler tubes may be effected for third quarter, but this prospective change is not considered to be indicative of any general revisions in the present pipe discount or extra cards.

## Bars

Orders are running behind shipments, and a cautious consumer attitude has been noticeable since the beginning of the latest labor outburst in the automotive industry. Otherwise demand is on an even keel, with miscellaneous tonnage the steadying factor. Demand for alloy bars and forging bars is not so heavy as it was two weeks ago.

## Wire Products

Automotive strikes have not yet seriously affected aggregate wire demand in this district. A few deferments in shipments are reported, but suspensions are expected to spread if the labor unsettlement is not solved promptly. Demand for merchant wire is behind seasonal expectations, although for certain farm items calls are coming in quite freely. Demand from public utility companies still is depressed.

## Sheets

Shipping suspensions resulting from automotive strikes and a moderate decline in miscellaneous bookings have forced sheet mill schedules five to 10 points lower this week, and output for the industry will average not better than 60 per cent. Backlogs are declining noticeably, and operations now are fluctuating more closely with ultimate demand.

## Tin Plate

Operations are starting the week a few points higher at between 80 to 85 per cent, a leading independent producer having resumed hot mill operations. Mill schedules are becoming more uncertain, however, as backlogs dwindle. Most mills are producing against a fair share of releases for later shipment. Estimates of 25 per cent are placed on the current stocking movement for subsequent release. No precipitate decline in output is yet in sight.

# Coke and Coal

Beginning May 6 all shipments of coal and coke within the State of Pennsylvania became subject to the I.C.C. emergency freight surcharge. As an important consequence, those western Pennsylvania mines serving Ohio consumers have lost that business temporarily to Ohio producers, who still are able to ship on intrastate movements in Ohio without applying the surcharges. Some mines in the western Pennsylvania area have ceased operations, with a number of small independent producers operating not

more than two days a week. Although the outlook for settlement of any controversy that may arise upon resumption of negotiations for renewing the present wage contract on June 16 is rather indefinite, practically all classes of consumers are finding little incentive for protective buying. Railroads are taking only a normal movement of fuel, while public utilities and other large consuming groups are not active in the present market. Prices on bituminous coal still lack stability, with some concessions reported at as high as 65c. a ton. Furnace and foundry coke movement is still only fair.

# Strip Steel

Automotive specifications are surprisingly steady in the face of labor difficulties. Some deferments on certain sizes have appeared, but the automotive strikes have not yet taken a serious toll of strip movement out of this district. Miscellaneous business likewise is showing staying powers. New orders possibly are a trace behind shipments, and mill backlogs are not so husky as they were at mid-April. Output for the strip industry this week possibly will tend downward

if the automotive strikes are not settled.

# Scrap

Scattered evidences of firmness are appearing, but a general absence of consumer demand is at least temporarily offsetting bullishness on the part of some dealers. Strengthening influences are the higher prices reported paid for No. 1 heavy melting steel on the recent Pennsylvania Railroad list, the general disinclination of small yard dealers to release much scrap to brokers at current prices, and the application of the emergency freight surcharges. Ordinary No. 1 heavy melting steel is firm solely by virtue of dealer bidding against old orders, which are being covered at as high as \$11.75, delivered this district. No recent consumer sales of ordinary No. 1 heavy melting steel have been reported at higher than \$11.75. Machine shop turnings are higher on dealer covering. Cast scrap has assumed strength with a 50c advance recorded in heavy breakable cast and No. 1 cast, which have been sold recently in representative lots. Railroad specialties are in better demand.

# Coast Firms to Bid on Dry Dock

CAN FRANCISCO, May 6 .- Better feeling on the Pacific Coast is backed by an increase in business activity which probably exceeds that of the last quarter of 1934. The plans for a Government dry dock at Pearl Harbor, T. H., is but one project among many that may be carried out now that the huge works relief bill has become law. It is reported that only Pacific Coast firms will be invited to bid on the construction of the floating dry dock, which is estimated to cost \$10,000,000 and will displace 32,000 tons. Many believe that the failure of Pacific Coast yards to gain recent contracts on Navy vessels is a contributing factor to the limitation of bids on the Pearl Harbor dry dock to West Coast concerns.

Lettings during the past week were few and for minor tonnages. However, a great number of projects calling for major tonnages have been taken by general contractors and steel awards are expected shortly.

New projects continue to be added to the long pending list. The

Metropolitan Water District at Los Angeles has bids under advisement for 600 tons of structural steel for tunnel supports. Warner Brothers will build a new sound stage at Hollywood, Cal., which will require 400 tons of shapes. May 22 has been set as the date for bids for a State grade separation project at Berkeley, Cal. The Northwest has shown a considerable increase in the number of construction jobs, although many are for lighter tonnages. School reconstruction continues active in southern California.

# Detroit Scrap Mart Is Stronger

DETROIT, May 7.—Hydraulic bundles are up 25c. a ton and are commanding a premium over heavy melting steel in the local scrap market because of the preference shown for this item by the local steel plant. All quotations are on a firmer basis and the tone of the market is improved over that a week ago. Dealers don't look for much change in prices, however, in the next 30 days.

# Chicago Output Rises To 53½ Per Cent



Steel Scrap Also Advances But Nearby Outlook Is for a Gradual Recession in Mill Operations

HICAGO, May 7.—Changes are beginning to make their appearance, and some better idea can now be had of the market drift. Agricultural implements that are seasonal in character are dropping back in demand, but manufacturers are laying plans for June and July schedules of combines and other harvesting equipment. Some builders of tractors are allocating production because of inability to meet the full demand which is in part a result of Case's inability to produce, the strike still being in effect at the Racine plant. Consumption of steel by automobile plants has declined more than the amount accounted for by strikes. With the transfer of production to peaceful areas, part of the strike loss of tonnage is being regained this week.

Bunching of structural releases accounts in large measure for a one and one-half point gain in ingot production, which now stands close to 53½ per cent of capacity. New structural business is light and it cannot be counted on to give additional support to operations in the near future. New buying all along the line is light and backlogs are shrinking. The picture as viewed by most producers at this time is that more open-hearth furnaces will be taken out of service in the next week to 10 days.

Although an advanced price has been paid for heavy melting steel by a mill, enthusiasm on the part of brokers is less marked than a week ago.

# Pig Iron

Owing to the self-contained character of General Motors, current strike difficulties have resulted in little change as yet in Chicago district foundry operations. Castings orders for some types of farm equipment are lighter, but the bulk of current tonnage moves to tractor plants that are counting on good business for at least three months longer. Sellers' stocks of pig iron continue to shrink and it is not beyond the realm of possibility that another furnace may

be needed in the near future in order to hold the present satisfactory balance as to grades.

# Reinforcing Bars

Business has been rather quiet, with most dealers out of town attending their association's convention. The Armour job at Chicago is now disclosed as an 880-ton project. The State of Illinois will use about 1000 tons for slab and bridge work on which plans are now being prepared. A number of small sewage disposal projects are in the making, and as public work of that size climbs there is a noticeable drop in small commercial jobs. Northwestern University is having plans prepared for a 15story building to be erected in Chicago. The type of its con-struction is not announced.

# Cast Iron Pipe

Demand is quiet and numerous pending orders are being held in check. A contractor has 1100 tons to place for Aurora, Ill., and the same situation prevails at Princeton, Wis., where 150 tons is needed. Revival of this market appears to hinge on loosening of the Government's purse strings. Prices are well established at the advance of \$1 a ton, base Birmingham, plus freight and, in the case of Chicago, an additional 40c. a ton to cover freight surcharge. Foundry operations vary, with some units as high as 60 per cent of capacity.

## Structural Material

New awards and fresh inquiries are about equal, at 3000 tons each, which are poor showings in view of the shop capacity in this district. However, old orders are well bunched, and shops are taking more steel from mills and they look hopefully to the new Federal spending program. The way seems to be clearing for the Ashland Avenue bridge and bids may be taken before the end of the month. The Milwaukee road has ordered about 300 tons of miscellaneous

bridge work from a number of fabricators.

# Cold Rolled Strip

Output remains at 50 to 55 per cent of capacity. Producers report that an increasingly large part of their tonnage is running to specialty sizes as sheet mills take more and more of the tonnage business.

## Sheets

New business is dropping very fast and backlogs are disappearing. Labor trouble in the automobile industry accounts in part for a drop in shipments, but it is also noticeable that miscellaneous consumers are ordering less freely. Current shipments are supporting an output of close to 70 per cent of mill capacity.

# Bars

Road machinery builders are swinging into substantial spring activity and are offsetting the drop in bar demand from manufacturers of farm tillage machinery, who though curtailing operations in some lines now are preparing sizable schedules of harvesting equipment for the early part of July. Hold-up orders on automotive tonnages are a disturbing factor and the two-month old strike at Racine is still keeping the Case farm machinery plant idle.

## Rails

It is now reported that the Milwaukee road will not consider the purchase of rails until some time after the first of June. A railroad operating north of Chicago will soon take figures on 8000 tons. Transactions in track accessories are unusually light for this time of year.

## **Plates**

The trade now understands that the Burlington has indefinitely postponed the construction of 250 hopper cars. The St. Louis-San Francisco will rebuild 750 wooden box cars in its own shops. The local plate market remains very quiet, though it is reported that orders for oil county goods are increasing in number to the east of Chicago.

# Wire Products

Output is holding within a range of 50 to 60 per cent as May shipments average close to those in April. Wire producers are feeling the effects of labor strife in the automobile industry, but hold-up orders are not so large as might be expected because of the transfer of some automobile work to unaffected areas. Country sales are dropping, but miscellaneous manufacturing demand is slightly larger. Farm implement plants are less busy but are planning larger sched-(CONTINUED ON PAGE 79)

THE IRON AGE, May 9, 1935-69

# Prices of Finished Steel and Iron Products

BOLTS, N

(F.o.b. Pit

Then and Steel Barry and Johnson Steel Barry and Johns	n less Plow bo	On standard steel pipe an extra 5% of is allowed on sales to consumers while to	WIRE PRODUCTS	Steel Sheet Piling	BARS, PLATES, SHAPES
p. A. Chitage		5's off apply on sales to jobbers. On less-	(Carload lots, f.o.b. Pittsburgh and Cleve-		Iron and Steel Bars
## Carry Conf. Car	nd the Het-pres	mined by adding 20 and 25% and the	Iand.) To Manufacturing Trade Per Lb.	F.o.b. Chicago	
SHEETS   STRIP FIN PLATE   TRUE PLATE   TR	18 79.	structural steel nine the base card is me	Bright wire	F.o.b. cars dock Gulf ports2.60c.	F.o.b. Chicago
SKEETS. STRP. TIN PLATE  TERM FLATE  Sheets  Her North 2.5.  Billed New York	obben C.p.c. a	to consumers and three 5's off to jobben	Chicago prices on products sold to the	P.O.O. Cars QUER Facility Ports	F.o.b. Duluth
Fig.   Print   1.00	scount Samisfin	two points less than the above discount	manufacturing trade are \$1 a ton above Pittsburgh or Cleveland. Worcester and	SHEETS, STRIP, TIN PLATE	Del'd Detroit
Description   1.50	ts less   all air	Chicago delivered base is 2% points les	Duluth prices are \$2 a ton above, Bir-	TERNE PLATE	F.o.b. Buffalo
## P.A. cers don't Potellin ports	he bill 1/4 in.	Ohio, and Chicago district mills, the bill-	\$9 a ton above Pittsburgh or Cleveland.	Sheets	Del'd New York 2.15c
## Baile Steel  ## Baile Steel  ## Baile Steel  ## Baile Steel  ## Baile For merchant trade    \$1.50	larger	lowest price to destination.	To Jobbing Trade		F.o.b, cars dock Gulf ports 2.20c.
Pat.   Pittlorigh   1.76c   7.75c	Store b	Dellas Peter	Qualified jobbers are entitled to a re-	No. 10, f.o.b. Pittsburgh	F.o.b. cars dock Pacific ports2.35c.
Pa.b.   Chicago	Tube Stove b		price on carload shipments to stock, and	No. 10. del'd Detroit	
Pab. Chicago   1-256	Stove b	and Locometive Tubes		No. 10, f.o.b. Birmingham2.16c.	F.o.b. Pittsburgh
## An Justice   1.1   1.5   ## An Justice   1.1   ## An Justice   1.1   1.5   ## An Ju	Pitte Tire bo	(Net base prices per 100 ft. f.o.b. Pitta- burgh, in carload lots)		ports	F.o.b. Chicago
Pack   Bodrale   1.40c,   Pack   1.40c,   Pa	Hot Rolled	Cold Hot			F.o.b. Moline, Ill
Straight Intention a quoted by distributers   2.50c	\$7.81 F.o.b.	1 in. o.d. 13 B.W.G. \$ 8.60 \$7.8	Smooth coated nails 2.60	No. 24, f.o.b. Pittsburgh2,40c.	F.o.b. Buffalo
Stright Intendrency   Constitution	9.3 F.o.b. 10.33 F.o.b.	1 1 in. o.d. 13 B.W.G. 11.26 10.20	15 gage and coarser 4.60	No. 24. del'd Detroit	F.o.b. cars dock Gulf ports2.10c.
Strickleit Interface as quoted by distributors   1.05c	13.64	2 in a.d. 13 R.W.G. 14.35 13 8	10 gage and mer 5.10	No. 24, del'd Phila	
District interface a quote by distributers	14.54 17.54	1 914 in a d 19 D W (1 10 90 17 t)		No. 24, f.o.b. dock cars Pacific	
Description   1.10	18.8 F.o.b.	2% in. o.d. 12 B.W.G. 20.45 18.8 3 in. o.d. 12 B.W.G. 21.45 19.9	Galvanized fence wire 2.80	No. 24, wrought iron, Pittsburgh4.30c.	F.o.b. Pittsburgh
No. 10 state, del'd Pfalta   2.55	37.35	4½ in. o.d. 10 B.W.G. 41.08 37.3	Polished staples		F.o.b. Chicago 9 10c
No. 10   1886   del   Palla   1.50	30.54 (Freig	4 in. o.d. 10 B.W.G. 33.60 30.50	Barbed wire, galvanized 3.00	No. 10 gage, f.o.b. Gary	Bel'd Detroit
P.a.b. cars dock Guilf ports.   2-5c.	46.87 Milled	4 1/2 in. o.d. 10 B.W.G. 41.08 37.55 5 in. o.d. 9 B.W.G. 51.56 46.87	Chicago and Anderson, Ind., mill prices	No. 10 gage, del'd Detroit 2.70c.	F.U.O. Youngstown
Building	les: smal	6 in. o.d. 7 B.W.G. 79.15 71.36 Extras for less-carload quantitles:	are \$1 a ton over Pittsburgh base (on all products except woven wire fence, for which	No. 10 gage, f.o.b. Birmingham 2.65c.	F.o.b. Birmingham
Light Codd-Related   1.50c.	1246 lard	25,000 lb, or ft, to 39,999 lb, or ft, 5 10,000 lb or ft to 24,999 lb, or ft, 12%6	the Chicago price is \$2 above Pittsburgh); Duluth, Minn., and Worcester, Mass., mill	ports	F.o.b. cars dock Gulf ports2.45c.
Straight lengths as quoted by distributers   1.96c	25 4 Milled	2.000 lb. or ft. to 9.999 lb. or ft. 25 S	prices are \$2 a ton over Pittsburgh (ex-	Light Cold-Rolled	
P.o.b.   Dittaburgh   1.90c	oal Irm or	Lapweld Steel and Knobbled Charcoal Irm	is \$3 over Pittsburgh), and Birmingham	No. 20 gage, f.o.b. Pittsburgh2.95c.	(Straight lengths as quoted by distributers)
P. o.   Gary   1.95c   No. 24   6.0.b (occurs Pacific   1.95c   No. 24   6.0	Pitts- Upset	Pressure Tubes (Net base prices per 100 ft. f.o.b. Pitte-	On wire nails harhed wire stanles and	No. 20 gage, del'd Detroit3.15c.	F.o.b. Pittsburgh
P.o.b.   Vourestown   1.85C   P.o.b.   Barfield   1.85C   P.o.b.   Barfield   1.85C   P.o.b.   Carles   1.85C   P.o.b.   Pittaburgh   2.85C   P.o.b.   Patter   1.85C   P.o.b.   Patter   1.85C   P.o.b.   Patter   1.85C   P.o.b.   Patter   1.85C   P.o.b.   Pittaburgh   2.85C   P.o.b.   Patter   1.85C   P.o.b.   Pittaburgh   2.85C   P.o.b.   Pit	Miller	burgh, in carload lots)	fence wire, prices at Houston, Galveston and Corpus Christi, Tax. New Orleans.	No. 20 gage, del'd Phila3.26c. No. 20 gage, f.o.b. Birmingham3.10c.	F.o.b. Gary
P.a.b. cars dock Gulf ports   3.30c   P.a.b. cars dock Pacific ports   3.30c   P.a.b. cars dock Pacific ports   3.30c   P.a.b. cars dock Pacific ports   3.30c   P.a.b. Chicago   3.40c   P.a.b. Darwille, P.a.   1.80c   P.a.b. Distribution   1.30c   P.a.b. Distrib	\$20.16	11/2 in. o.d. 13 B.W.G\$ 9.72 \$20.10	Lake Charles, La., and Mobile, Ala., are	No. 24, f.o.b. dock cars Pacific	F.O.D. Yourgstown
Fo.b. cars dock Pacific ports	21.84 All	1% in. o.d. 13 B.W.G 11.06 21.8 2 in. o.d. 13 B.W.G 12.38 17.2	Coast prices are \$8 over Pittsburgh.		F.o.b. Birmingham
Section   Color   Co	19.58	214 in. o.d. 13 B.W.G 13.79 19.30	prices are \$11 a ton above Pittsburgh.	No. 24, gage, f.o.b. Pittsburgh3.19c.	F.o.b. cars dock Pacific ports2.30c.
Scale   Chicago   1.86c   Fo.b.   Darrel Haute. Ind.   1.75c   Fo.b.   Darrel Haute. Ind.   1.75c   Fo.b.   Darrellile   Fo.b.   Darr	26.46 F.e 28.39 Mass	2% in. o.d. 12 B.W.G 17.54 26.0	\$6 a ton above Pittsburgh are also quoted	No. 24, del'd Phila	
No. 24, wrought fron. Pittsburgh   4.95c.	33.95 Unero 36.16 Allo	3¼ in. o.d. 11 B.W.G 21.56 33.8	at Beaumont and Orange, Tex.	No. 24, f.o.b. Birmingham3.25c. No. 24, f.o.b. dock cars Pacific	
Long Termes   Long Termes	45.38	4 in. o.d. 10 B.W.G 28.66 45.8	Wise Hoose Twisted William	No. 24, wrought iron, Pittsburgh 4 956	F.o.b. Terre Haute, Ind 1.75c. F.o.b. Louisville, Ky 2.10c
No. 24, unassorted 8-lb. coating food Finished Bars and Shafting Fo.b. Pittsburgh	50.43 F.6 61.86 Mass	5 in. o.d. 9 B.W.G 35.22 50.0			F.o.b, Dansville, Pa. 1.80c. F.o.b, Berwick, Pa. 1.70c
Cold Finished Bars and Shafting  Base per Lo. F.a.b. Pittsburgh  Base per Lo. F.a.b. Oliclesgo  1.96. F.a.b. Clary  2.00c F.a.b. Clary  2.00c F.a.b. Discretand  2.00c F.a.	102.46 Ba			No. 24, unassorted 8-lb, coating	
Fa.b.   Pittaburgh   1.95c   Fa.b.   Chicago   2.00c   Fa.b.	e Pr	40,000 lb. or ftbase	F.o.b. Chicago	f.o.b. Pittsburgh	Cold Finished Bars and Shafting
F.o.b. Chicago	Dath	25,000 lb. or ft. to 39,999 lb. or ft			F.o.b. Pittsburgh Base per Lb.
E-b. D. Clereland 2.00c. E-b. Clereland 2.00c. De'd destroit 2.15c. De'd destroit 3.20c.  - In quantities of 10.000 to 19.000 lb.  Fence and Sign Posts  Angle Line Posts  Standard cokes, f.o.b. P'gh district  angle cokes, f.o.b. P'gh district  angle cokes, f.o.b. Carr dock  Standard cokes, f.o.b. Carr dock  Fo.b. Duluth 51.00  Fo.b. Houston, Drance, Beaumont 53.00  Fo.b. Houston, Drance, Beaumont 53.00  Fo.b. Wo orleans, Lake Charles, Corpus Christi Sp. 06 Fo.b. Pittsburgh  Post Standard cokes, f.o.b. Carr Sp. 06 Fo.b. Post Corpus Christi Sp. 06 Fo.b. Delid Cheve In Corpus Christi Sp. 06 Fo.b. District and Lorain, Ohio Mils  Fo.b. Pittsburgh on wrought iron places, fo.b. Pittsburgh of the Corpus Christi Sp. 06 Fo.b. District and Lorain, Ohio Mils  Standard cokes, f.o.b. carr dock  Standard cokes, f.o.b. carr dock  Tin Plate  Standard cokes, f.o.b. Carr dock  Standard cokes, f.o.b. Carr dock  Standard cokes, f.o.b. Carr dock  Fo.b. Hittsburgh of the Corpus Christi Sp. 06 Fo.b. Houston, Drance, Beaumont 53.00  Fo.b. District and Lorain, Ohio Mils  Fo.b. Pittsburgh on wrought iron place (Fo.b. Pittsburgh)  (Per Package, 20 x 28 in.)  (Per Package, 20 x 28 in.)  Inches Black Galv.  Fo.b. Pittsburgh on wrought iron place (Fo.b. Pittsburgh)  (Fo.b. Carr dock, Fo.b. Pittsburgh)  (Fo.b. Pittsburgh of the Corpus Christi Sp. 06)  Fo.b. Carr dock, Fo.b. Pittsburgh of the Corpus Christing Christi	Open	10 000 lb or ft to 24 999 lb.			F.O.D. Chicago
Del'd detroit	25% Seri	2,000 lb. or ft. to 9,999 lb.			F.o.b. Cleveland 2 00c
Fence and Sign Posts  Angle Line Posts  Angle Line Posts  Angle Line Posts  Base per Net Ton F.o.b. Pittsburgh Bose per Net Ton F.o.b. Pittsburgh Bose per Net Ton F.o.b. Dittsburgh Bose per Net Bose per Lo. F.o.b. Dittsburgh Bose per Net Welded Pipe For Net Standard cokes, f.o.b. Cars dock F.o.b. Dittsburgh Bose per Lo. F.o.b. Cast gook Bos	40% 2000	Under 2.000 lb. or ftplus 40%	STEEL AND WROUGHT PIPE	No. 28, f.o.b. Pittsburgh 2.75c	Del'd Detroit
Fence and Sign Posts  Angle Line Posts  Angle Line Posts  Base per Net Ton F.o.b. Pittsburgh	2100 2300			No. 28. Gary	
## Fence and Sign Posts ## Angle Line Posts ## Base per Net Ton ## Base per Net ## Base pe	- SEA	CAST IRON WATER PIPE		ports3.35c.	- in quantities of 10,000 to 19,000 lb.
Standard cokes, f.o.b. P'gh district   Size   Standard cokes, f.o.b. P'gh district   Size   Standard cokes, f.o.b. Chicago   So. Ob. Pic. Ob. Chicago   So. Ob. Birmingham   So	. \$48.40 3300	*6-in. and larger, del'd Chicago\$48.4	Welded Pipe		
Standard cokes	. 51.40 3400 45.60 410	*4-in., del'd Chicago		Standard cokes, f.o.b. P'gh district	Race may Wet Ton
F.o.b. Delluth F.o.b. Clereland 53.00 F.o.b. Birmingham 53.00 F.o.b. Birmingham 53.00 F.o.b. Birmingham 53.00 F.o.b. Houston 63.00 F.o.b. New Orleans 63.00 F.o.b. Pittsburgh 64.00 F.o.b. Pittsburgh 65.00 F.o.b. Pittsburgh 66.00 F.o.b. Pittsburgh 66.00 F.o.b. Pittsburgh 66.00 F.o.b. Pittsburgh 67.00 F.o.b. Pittsburgh	. 48.00	4-in del'd New York	District and Lorain, Ohio Mills	mill	F.o.b. Pittsburgh
F.o.b. Birmingham	43.00	*4-in. Birmingham		Standard cokes, f.o.b. cars dock	F.o.h. Duluth 51.00
F.o.b. Mobile   S.0.0   F.o.b. New Orleans, Lake Charles, Corpus Christi   Sp.00   F.o.b. New Orleans, Lake Charles, Corpus Christi   Sp.00   F.o.b. gars dock Pacific ports   Sp.00   F.o.b. plates   Base per Lb.   F.o.b. Pittsburgh   L.80c.   F.o.b. Chicago   L.85c.   F.o.b. Chicago   L.85c.   F.o.b. Chicago   L.85c.   F.o.b. Sparrows Point   L.90c.   F.o.b. Sparrows Point   L.90c.   F.o.b. Sparrows Point   L.90c.   F.o.b. Sparrows Point   L.90c.   F.o.b. Chicago   L.85c.   F.o.b. Sparrows Point   L.90c.   F.o.b. Chicago   L.85c.   F.o.b. Sparrows Point   L.90c.   F.o.b. Sparrows Point   L.90c.   F.o.b. Chicago   L.85c.   F.o.b. Sparrows Point   L.90c.   F.o.b. Sparrows Point   L.90c.   F.o.b. Chicago   L.85c.   F.o.b. Chicago   L.85c.   F.o.b. Sparrows Point   L.90c.   F.o.b. Chicago   L.85c.   F.o.b. Chicago   L.85c.   F.o.b. Sparrows Point   L.90c.   F.o.b. Sparrows Point   L.90c.   F.o.b. Chicago   L.85c.   F.o.b. Cating I.C.   13.00   1.5 lb. coating I.C.   13.00   1.5 lb. coating I.C.   1.5 lb. coatin	ra. 460	Class"A" and gas pipe, \$3 extra.			
F.o.b. Mobile F.o.b. New Orleans, Lake Charles. Corpus Christi F.o.b. New Orleans, Lake Charles. Corpus Christi F.o.b. pars dock Pacific ports 63.00 F.o.b. pars dock Pacific ports 63.00 F.o.b. pars dock Pacific ports 63.00 F.o.b. Chicago 1.5-ib. coating I.C. 12.00 3-ib. coating I.C. 13.00 3-ib. coating I.C. 13.00 3-ib. coating I.C. 15.25 40-ib. coating I	00 tons.	*Prices for lots of less than 200 tons			
Plates   Base per Lb.   Base per Lb.   All coating I.C.   14.00   30-lb. coating I.C.   15.25   1 to 364   55   1 to 36	lelivered	\$39. Birmingham, and \$47.40. delivere	to be a first of the first of t	(Per Package, 20 x 28 in.)	F.o.b. Mobile 58.00 F.o.b. New Orleans, Lake Charles
Plates   Base per Lb.   Base per Lb.   All coating I.C.   14.00   30-lb. coating I.C.   15.25   1 to 364   55   1 to 36	Chicago. 510	ham, and \$50.40 a ton, delivered Chicago	1/4 to 1/4 11/4 29 1/4 + 91 1/4 + 138 1/4 to 1/4 53 1/4 8/4 + 1 1/4 + 21 1/4	15-lb. coating I.C	Corpus Christi
Fo.b.   Gary   1.88c     Del'd Cleveland   1.995c     Fo.b. Coatesville   1.99c     Fo.b. Sparrows Point   1.99c     Fo.b. Sparrows Point   1.99c     Fo.b. Brain   1.99c     Fo.b. Brain   1.99c     Del'd New York   2.99c     Del'd New York   2.99c     Fo.b. Brain   1.99c     Del'd New York   2.99c     Del'd New York   2.99c     Fo.b. Brain   1.99c     Del'd New York   2.99c     Del'd New York   2.99c     Fo.b. Brain   1.99c     Del'd New York   2.99c     Del'd New York   2.99c     Fo.b. Brain   1.99c     Del'd New York   2.99c     Del'd New York   2.99c     Fo.b. Brain   1.99c     Del'd New York   2.99c     Del'd New York   2.99c     Fo.b. Brain   1.99c     Del'd New York   2.99c     Del'd New York   2.99c     Fo.b. Brain   1.99c     Del'd New York   2.99c     Del'd New York   2.	810		1/258 ½ 47 ½31 ½ 15 3/462 52 ¼36 ½ 20 ½	25-lb. coating I.C	
Fo.b.   Gary   1.88c     Del'd Cleveland   1.995c     Fo.b. Coatesville   1.99c     Fo.b. Sparrows Point   1.99c     Fo.b. Sparrows Point   1.99c     Fo.b. Brain   1.99c     Fo.b. Brain   1.99c     Del'd New York   2.99c     Del'd New York   2.99c     Fo.b. Brain   1.99c     Del'd New York   2.99c     Del'd New York   2.99c     Fo.b. Brain   1.99c     Del'd New York   2.99c     Del'd New York   2.99c     Fo.b. Brain   1.99c     Del'd New York   2.99c     Del'd New York   2.99c     Fo.b. Brain   1.99c     Del'd New York   2.99c     Del'd New York   2.99c     Fo.b. Brain   1.99c     Del'd New York   2.99c     Del'd New York   2.99c     Fo.b. Brain   1.99c     Del'd New York   2.99c     Del'd New York   2.99c     Fo.b. Brain   1.99c     Del'd New York   2.99c     Del'd New York   2.	ALS Ch	RAILROAD MATERIALS	1 to 364 55 181% 391% 251%	30-lb, coating I.C	Base per Lb.
Po.b. Gary   1.85c.	0.		241 1/2 26		F.o.b. Pittsburgh
Del'd New York 2.99c. F.o.b. Birmingham 1.95c. F.o.b. cars dock Gulf ports 2.29c. F.o.b. cars dock Pacific ports 2.35c. Wrought fron plates, f.o.b. P'gh 3.29c.		F.o.b. Mill			
Del'd New York 2.99c. F.o.b. Birmingham 1.95c. F.o.b. cars dock Gulf ports 2.29c. F.o.b. cars dock Pacific ports 2.35c. Wrought fron plates, f.o.b. P'gh 3.29c.	ba ba	Standard rails, heavier than 60 lb.,	Lap Weld	Rase ner F.h	F a.b. Coatesville
Fo.b. Birmingham 1.95c. Fo.b. ears dock Gulf ports 2.29c. Fo.b. ears dock Gulf ports 2.29c. Wrought iron plates, fo.b. P'gh 3.20c.  Wrought iron plates, fo.b. P'gh 3.20c.	2.55 di	Angle bars, per 100 lb 2.55		All widths up to 24 in., P'gh1.85c.	
F.o.b. cars dock Pacific ports. 2.35c. Cooperage stock, Pittsburgh . 2.10c. 9 and 10.63½ 53½ 14 bitsburgh . 2.10c. Cooperage stock, Chicago . 2.20c. 11 and 12.62½ 52½ 14 bitsburgh . 2.10c. Light rails (from rail steel) per gross ton.	- N	F.o.b. Code Basing Points	2½ to 363 54 2½ to 3½ 38 25	All widths up to 24 in., del'd De-	Poli Rimingham
gross ton		Light sails (from billets) ner gross		All widths up to 24 in., Birmingham 2.00c.	F.o.b. cars dock Gulf ports 2.20c.
gross ton	er er er	Light rails (from rail steel) per	11 and 1262½ 52½	Cooperage stock, Chicago2.10c.	Wrought iron plates, f.o.b. P'gh3.20c.
Cold Polled String	34.00 E			Cold Polled States	Floor Plates
	\$2.48	Spikes, 9/16 in. and larger \$2.4	Butt Weld, extra strong, plain ends		F.o.b. Pittsburgh
Spikes, ½ in, and smaller		Spikes, ½ in. and smaller 2.4 Spikes, boat and barge 2.4		F.o.b. Pittsburgh	F.o.b. Coatesville
Fo.b. cars dock Pacific ports. 3.75c. Fo.b. Cleveland 2.89c. 14 to %. 51 38 14.8 12.12 Tie plates steel	2.00	Tie plates steel 2.0	14 to %51 38 4&% +21/2+341/2	Del'd Chicago	Fob. cars dock Pacific ports3.75c.
Structural Shapes 34	er	Track bolts, to steam railroads 3.5	3461 52 437 1/2 22 1/2	F.o.b. Worcester2.80c.	Structural Shenes
Duso per Lio.	off list	100 count)70 per cent off in	1 to 363 55 1 to 243½ 29		Base per Lb.
F.a.b Pittsburgh 1.80c. No. 14, Pittsburgh or Cleveland. 2.90c. No. 14. Worcester	e Pitts.	Basing points on light rails are Pitts burgh. Chicago and Birmingham; on spike		No. 14, Worcester	F.o.b. Chicago
Del'd Cleveland 1.995c. No. 20. Pittsburgh or Cleveland3.30c. Lap Weld, extra strong, plain ends and tie plates. No. 20. Worcester	a spikes	and tie plates, Pittsburgh, Chicag	Lap Weld, extra strong, plain ends	No. 20. Fittsburgh or Cleveland3.30c. No. 20, Worcester3.70c.	Del'd Cleveland
F.o.b. Buffaio 1.90c. F.o.b. Bethlehem 1.90c. Hot-Rolled Rail Steel Strips 2 58 50 2 40 26 Ya. St. Louis, Kansas City, Min	Chicago.	Buffalo, Portsmouth, Ohio, Weirton, Wa., St. Louis, Kansas City, Minnequi Colo., Birmingham and Pacific Cost	2 58 50 2 40 26		Fo.h Bethlehem
Del'd Philadelphia	Chicago.		272 to 362 54   21/2 to 4 45 1/2 33		Del'd Philadelphia 2 015c
F.o.b. cars dock Gulf ports	ton, W.	ports; on tie plates alone. Steelton, Pa	3½ to 665½ 57½ 4½ to 6 45 33½	Base per Lo.	Del'd New York2.0625c.
F.o.b. cars dock Pacific ports2.35c, F.o.b. Birmingham	ton, W.	Colo., Birmingham and Pacinc Colo., part of the plates alone, Steeton, Paon spikes alone, Cleveland, Youngstow Lebanon, Pa., Columbia, Pa., Richmond Va., Jersey City, N. J.	Lap Weld, extra strong, plain ends  2 \( \frac{1}{2} \) \( \triangle \) \( \tr	F.o.b. Pittsburgh	P.o.b. Birmingham (standard)1.95c. P.o.b. cars dock Gulf ports

# BOLTS, NUTS, RIVETS AND SET SCREWS Bolts and Nuts

	DOILD SEARCE TARES	
(F.o.b.	Pittsburgh, Cleveland, Birmin	ng-
	ham or Chicago	
	Per Cent Off L	del
Machine	bolts	d 5
	bolts	
Leg bol	ts	d 5
	olts, Nos. 1, 2, 3 and 7	
		d 5
	sed nuts, blank or tapped,	
square		d 5
	sed nuts, blank or tapped,	
hexago	ns	d 5
	nd t. square or hex. nuts,	
	or tapped	id 5
	ished hexagon nuts, U.S.S.,	
all SI	zes	id a
	ished hexagon nuts, S.A.E.	
	to 7/16 in. diameter70, 10 an	
	to 1 in. diameter70, 10 an	
	than 1 in. diameter 70, 10 an	
	olts in packages, Pittsburgh	
	olts in packages, Chicago	
	olts in packages, Cleveland olts in bulk, Pittsburgh	
Store b	olte in bulk Chicago	81

Small Rivets
(7/16-in, 'and smaller)
Per Cent Off List
F.o.b. Pittsburgh
F.o.b. Cleveland
F.o.b. Chicago and Birm'g'm 70 and 5
Cap and Set Screws
(Freight allowed up to but not exceeding
65c. per 100 lb. on lots of 200 lb. or more)
Milled cap screws, 1 in. dia. and smaller
Milled standard set screws, case
lardened, 1 in. dia. and smaller 75
Milled headless set screws, cut thread
% in. and smaller
Upset hex. head cap screws, U.S.S.S.
or S.A.E. thread, 1 in. dia. and
smaller85
Upset set screw, cut and oval point
about the account the min or at bound

# Alloy and Stainless Steel

	Alloy	preel	LIN	gots		
F.a.b.		urgh.			Car	nton.
Massillo	n. Buffa	lo. Bet	hlehe	m.		
Uncropp	ed		.\$40	per	gross	ton
Alloy	Steel			Bille	ets	and
		Slab	5			
F.o.b.	Pittsb	urgh.	Chi	cage.	Car	aton.

lus 5% lus 121/4% lus 25% lus 40%

PIPE

IALS ies

oss ...\$35.00 per ... 34.00

200 £84. \$2.40 2.40 2.40 1.90 2.00 3.55

a. 3.55
per t off list
re Pittson spikes
Chicago,
ton, W.
innequa,
c Coast
on, Pa.;
ngstown,
lehmond.

Married The The The The Tree of the Tree o	Cancon,
Massillon, Buffalo, Bethlehem.	
Base price, \$49 a gross ton.	
Alloy Steel Bars	
Price del'd Detroit is \$52.	
F.o.b. Pittsburgh, Chicago,	Buffelo
Bethlehem, Massillon or Canton.	ANGEL GLU-
Open-hearth grade, base	9 450
Delivered price at Detroit is	9.600
	Alloy
	erential
	100 lb.
2000 (1/2 % Nickel)	\$0.25
2100 (216 % Nickel)	0.55
2300 (3½ % Nickel)	1.50
2500 (5% Nickel)	2.25
3100 Nickel Chromium	0.55
3200 Nickel Chromium	1.35
3300 Nickel Chromium	3.80
3400 Nickel Chromium	3.20
4100 Chromium Molybdenum (0.15	
to 0.25 Molybdenum)	0.50
4100 Chromium Molybdenum (0.25	
to 0.40 Molyhdenum)	0.70
4600 Nickel Molybdenum (0.20 to	0.00
0.30 Molyhdenum) (1.50 to	
9.00 Michell (1.50 to	1.05
2.00 Nickel)	
5100 Chromium Steel (0.60 to	
0.90 Chromium)	0.35
5100 Chromium Steel (0.80 to	
1.10 Chromium)	0.45
5100 Chromium Spring Steel	hase
6100 Chromium Vanadium Bar.	1.20
\$100 Chromium Vanadium Spring	
Steel	0.70
Ch	

Carbon Vanadium ... 0.95

These prices are for hot-rolled steel bars. The differential for most grades in electric furnace steel is 50c. higher. The differential for cold-drawn bars is ½c. per lb. higher with separate extras. Blooms, billets and slabs under 4x4 in. or equivalent are sold on the bar base. Slabs with a section area of 16 in. and 2½ in. thick or over take the billet hase. Sections 4x4 in. to 10x10 in. or equivalent carry a gross ton price, which is the net price for bars for the same analysis. Larger sizes carry extras.

Alloy Cold-Finished Bars
F.o.b. Pittsburgh. Chicago. Gary. Cleveland or Buffalo. 2.95c. hase per lb.

STAINLESS STEEL NO. 302

mind to Builtain. 2.200. made her in.	
STAINLESS STEEL No. 3	02
(17 to 19% Cr. 7 to 9% N1. (	1.08 to
0.20% C.)	
(Base Prices, f.o.b. Pittsburgh	1)
	Per Lb.
Forging billets	.19.55c.
Rerolling slabs	15c.
Bars	23c.
Plates	26c.
Plates Structural shapes	23c.

# Raw and Semi-Finished Steel

# Carbon Steel Rerolling Ingots

				.00	a O	,
	F.o.b. P.	ittsburgh,	Chicago,	G	ary, Cl	eve
	land, You	ngstown,	Buffalo,	B	irmingi	nam
ŀ	Uncropped		\$29	per	gross	10

Carbon S				
F.o.b. Pittab	wn, Birmi	nghan	n.	
Uncropped	Blooms			103

F.o.b. Pittsburgh, Chicago, Gary, Cleve- land. Youngstown, Buffalo, Birmingham. Per Gross Ton
Rerolling\$27.00 Forging quality 32.00
Delivered Detroit
Rerolling
Rerolling\$29.00 Forging34.00

F.o.b.	Pitt	sburgh.	Chicago.	Cleveland.
Youngsto Point, M		Buffalo,	Canton,	Sparrows
Open-hea	-	r Bessen		Gross Ton

		Skeib		
	Pittsburg Coatesvill			
Grooved Universal Sheared				. 1.70c.
	Tub	e Roui	nds	
F.o.b. P	ittsburgh		Base	per Lb.

FR - L	Buse per Lo.
	Pittsburgh 1.80c.
	Chicago 1.85c.
F.o.b.	Cleveland 1.85c.
F.o.b.	Buffalo 1.90c.
F.o.b.	Birmingham 1.95c.
	Wire Rods

w .	Table 1 - 1											88 7
F.o.b.												\$38
F.o.b.												
F.o.b.	Chicago											
F.o.b.	Anderson, Ind											39
F.o.b.	Youngstown .											39
F.o.b.	Worcester, M	ľa	5	g			-					40
	Birmingham											
F.o.b.												
F.o.b.			•					Ĭ				44

# Pig Iron and Ferroalloys

## PRICES PER GROSS TON AT BASING POINTS

Basing Points	No. 2 Fdry.	Maileable	Basic	Besseme
Everett, Mass	\$19.50	\$20.00	\$19.00	\$20.50
Bethlehem, Pa	19.50	20.00	19.00	20.50
Birdsboro, Pa	19.50	20.00	19.00	20.50
Swedeland, Pa	19.50	20.00	19.00	20.50
Steelton, Pa	2111		19.00	****
Sparrows Point, Md	19.50	****	19.00	
Neville Island, Pa	18.50	18.50	18.00	19.00
Sharpsville. Pa	18.50	18.50	18.00	19.00
Youngstown	18.50	18.50	18.00	19.00
Buffalo	18.50	19.00	17.50	19.50
Erie, Pa	18.30	19.00	18.00	19.50
Cleveland		18.50	18.00	19.00
Toledo, Ohio		18.50	18.90	19.00
Jackson, Ohio	20.25	20.25	19.75	
Detroit		18.50	18.00	19.00
Hamilton, Ohio		18.50	18.00	19.00
Chicago		18.50	18.00	19.00
Granite City, III		18.50	18.00	****
Duluth. Minn	19.00	19.00	10.00	19.50
Birmingham		14.50	13.50	19.00
Provo. Utah		14.00	17.00	1555

# DELIVERED PRICES PER GROSS TON AT CONSUMING CENTERS

	No. 2 Fdry.	Malleable	Basic	Bessemer
Boston Switching District	***	*** **	***	
From Everett, Mass Brooklyn	\$20.00	\$20.50	\$19.50	\$21.00
From East, Pa	21.9289	22,4289	21.9289	22,9289
Newark or Jersey City, N. J.	**.0.000	M. 1200	21.0000	**.0***
From East. Pa	20.9873	21.4873	20.4873	21.9873
Philadelphia	** ***			
From Eastern Pa	20.3132	20.8132	19.8132	21.3132
From Hamilton, Ohio	19.51	19.51	19.01	20.01
Canton, Ohio	10.01	20.01	A.O. O.A.	40.01
From Cleveland and Youngstown	19.76	19.76	19.26	20.26
Columbus, Ohio				
From Hamilton, Ohio	20.50	20.50	****	****
Mansfield, Ohio				
From Cleveland and Toledo	20.26	20.26		****
Indianapolis				
From Hamilton, Ohio	20.93	20.93	****	***
South Bend, Ind. From Chicago	22 222	** ***		
Milwaukee	20.6935	20.6935	4.6 4.6	****
	19.57	19.57		
From Chicago	19.51	13.34	****	****
From Duluth	20.94			
Davenport, Iowa	20.04	****	****	****
From Chicago	20.3832	20.3832		****
Kansas City	000*	20.0002		
From Granite City	21.2178	21.2178	****	
minimized				

# LOW PHOSPHORUS PIG IRON CHARCOAL PIG IRON Basing points: Birdsboro, Pa., Steelton, Pa., and Standish, N. Y.....\$23.50

# GRAY FORGE PIG IRON

-	JUW		OK	UL	6.1	u		l E	,,	9	1			
Valley														
Pittsbu	irgh	dis	rict	furi	ace		0	2.5		2.5		1	ð.	U

Lake	Sup	erlor	fur	nace					\$21.	00
Deliv	ered	Chie	ago						. 24.	252

Per gross ton:
Delivered Toronto
No. 1 fdy., ril, 2.25 to 2.75 <b>321.06</b> No. 2 fdy., sil. 1.75 to 2.75 <b>30.50</b> Malleable
Delivered Montreal

# **FERROALLOYS** Ferromanganese

F.o.b.	New	York, Pl		Balti-
Domestic.			Per Gr	.\$85.00

# Spiegeleisen

Per Gross Ton Furnace
Domestic, 19 to 21% .....\$26.00

## Electric Ferrosilicon

					P	e	۲	1	G	F	0	81	B	1	ľ	11	8	L	)eliver	
	(carloads)		0							٠					0	0			\$77	.5
	(ton lots)							-												, u
	(carloads	0		0	0	0		0	0	0	0	0	0	0	0	0	0	0	. 120	.v
75%	(ton lots)			0			0	0		0	0	0	0	0		0	0	0	. 136	, U

	Silvery	Iron	
F.o.b.	Jackson.	Ohio.	Furnace
Den Co	ose Ton		Per Gross Tor

	a range american	-	
	Per Gross Ton		Per Gross Ton
6%	\$22.75	12%	\$29.25
7%	23.75	13%	30.75
8%	24.75	14%	32.25
9%	25.75	15%	33.75
10%	26.75	16%	35.25
11%	27.75	17%	36.75
22.00	fire and and	A-15	ed price from
Th	e lower all-rail	deliver	ed brice trom
Tanker	on or Buffalo is	GHOLE	d with treight

Jackson or Buffalo is quoted with residute allowed. Base prices at Buffalo are \$1.25 a ton higher than at Jackson.

# Bessemer Ferrosilicon

# F.o.b. Jackson, Ohio, Furnace

Per Gross Ton	Per Gross Ton
1005 \$97.75	14%\$33.25
1105 98.75	15% 34.75
20.95	16% 36.25
13% 31.75	17% 37.75
Mangansee 1½ to tional. For each un	3%, \$1 a ton addi-
3%. \$1 a ton add 0.75% or over. \$1 to	minnal. Phosphorus
Base prices at Buf	falo are \$1.25 a ton

Other resemble
Ferrotungsten, per lb. contained W. del., carloads\$1.35 to \$1.45
Ferrotungsten, less carloads, 1.45 to 1.55
Ferrochromium, 4 to 6% carbon and up, 65 to 70% Cr. per lh. contained Cr. delivered, in car- loads
Ferrochromium, 2% carbon
Ferrochromium, 1% carbon
Ferrochromium, 0.10% carbon
Ferrochromium, 0.06% carbon
Ferrovanadium, del. per
Ferrocarbontitanium. 15 to 18% T1, 6 to 8% C, f.o.b. furnace carload and contract per net ton.\$137.50
Ferrophosphorus, electric, or blast furnace material, in carloads, 18%, Rockdale, Tenn., base, per gross ton with \$2 unitage 50.90
Ferrophosphorus, electric, 24% f.o.b. Anniston, Ala., per gross ton with \$2.75 unitage
Ferromolybdenum, per 1b. Mo., del. 95c.
Calcium molybdate, per lb. Mo., del 80e.
Silico spiegel. per ton, f.o.b. fur- nace, car lots
Silico-manganese, gross ton, deliv- ered:
2.50% carbon grade
Snot prices

# Iron and Steel Scrap

# PITTSBURGH

111130000		
Per gress ton delivered con	sumers'	yards:
No. 1 heavy melting steel. \$	11.25 to	\$11.75
No. 2 heavy melting steel.	10.00 to	10.50
No. 2 railroad wrought	11.25 to	11.75
Scrap rails	11.50 to	12.00
Rails, 3 ft. and under	12.75 to	13,25
Compressed sheet steel	11.00 to	11.50
Hand bundled sheet steel	19.00 to	10.50
Hvy. steel axle turnings	10.00 to	10.50
Machine shop turnings		
Short shov. turnings	7.75 to	8.25
Short mixed borings and		
turnings	6.00 to	
Cast iron borings	6.00 to	
Cast iron carwheels	12.00 to	12.50
Heavy breakable cast	11.50 to	
No. 1 cast	12.50 to	13.00
Railr. knuckles and cou-		
plers	14.00 to	14.50
Rail, coll and leaf springs		
Rolled steel wheels	14.00 to	14.50
Low phos. billet crops	14.75 to	15.25
Lew phos. sheet bar crops.	14.25 to	14.75
Lew phos. plate scrap	14.00 to	14.50
Low phos. punchings	14.00 to	14.50
Steel car axies	14.25 to	14.75

# CHICAGO

	Per Gr	oss Ton
Heavy melting steel	\$9.75 to	\$10.25
Autemobile hyv. melt steel	9.00 to	9.50
Shoveling steel	9.75 to	10.25
Tydraulie comp. sheets	8.50 to	9.00
Drop forge flashings		
No. 1 busheling	8.25 to	8.75
MULIOU CALWOHELS		
sailroad tires	11.50 to	12.00
Railroad leaf springs	10.50 to	
xle turnings	9.00 to	
steel couplers and knuckles		
Coil springs	12.00 to	
axle turnings (elec. fur.).	9.50 to	10.00
ow phos. punchings	12.50 to	13.00
ow phos. plates, 12 in.		
and under		
ast iron borings	5.00 to	
Short shoveling turnings	5.00 to	
fachine shop turnings	4.50 to	
Rerolling rails	11.00 to	
steel rails, less than 3 ft.	12.00 to	
steel rails, less than 2 ft.	12.50 to	
ingle bars, steel	11.25 to	
ast iron carwheels	10.50 to	
Railroad malleable	13.00 to	
Agricultural malleable	9.50 to	10.00

	1-61	N	er Ton
Iron car axles	14.50	to	\$15,00
Steel car axles	13.50	to	14.00
No. 1 railroad wrought	8.00	to	8.50
No. 2 railroad wrought	8.50	to	9.00
No. 2 busheling	4.50	to	5.00
Locomotive tires, smooth	10.08	to	10.50
Pipe and flues	5.00	to	5.50
No. 1 machinery cast	9.00	to	9.50
Clean automobile cast	8.50	to	9.00
No. 1 railroad cast	8.00	to	8.50
No. 1 agricultural cast	8.00	to	8.50
Stove plate	5.00	to	5.50
Grate bars	5.50	to	6.00
Brake shoes	6.00	to	6.56

# PHILADELPHIA

Per gross ton delivered cons	umers' )	ards:
No. 1 heavy melting steel.	\$9.50 to	\$10.50
No. 2 heavy melting stee!	*8.50 to	9.00
No. 1 railroad wrought	19.90 to	10.50
Bundled sheets	9.50 to	10.00
mygraulic compressed, new	9.50 to	10.00
Hydraulic compressed, old.	7.00 to	7.50
Machine shop turnings	5.50 to	6.00
Heavy axle turnings	8.50 to	9.00
Cast borings	5.00 to	5.50
Stove plate (steel works)	8.00 to	
Heavy breakshie cast	10.00 to	10.50
No. I low phos. heavy	13.75 to	14.25
Couplers and knuckles	13.50 to	14.00
Rolled steel wheels	13.50 to	14.00
No. 1 blast furnace	4.75 to	5.00
Spec. fron and steel pipe	8.00 to	
Shafting	2244	17.0
Steel axles		16.00
No. 1 forge fire	9.50 to	
Cast fron carwheels	11.00 to	
No. 1 cast	11.00 to	11.50
Cast horings (chem.)	12.00 to	14.0
Steel rails for rolling	12.00 to	12.50

<sup>·</sup> Brokers' buying price for export.

## CINCINNATI

CHICHINA	1 1	
Dealers' buying prices per g	ross ton:	
No. 1 heavy melting steel.	\$7.50 to	
No. 2 heavy melting steel.	6.00 to	6.5
Scrap rails for melting	7.50 to	8.0
Loose sheet clippings	4.00 to	4.5
Bundled sheets	5.50 to	6.0
Cast fron borings	4.00 to	4.5
Machine shop turnings	4.00 to	4.50
No. 1 busheling	5.50 to	6.00
No. 2 husheling	2.25 to	2.7
Rails for rolling	8.50 to	9.0
No. 1 locomotive tires	6.75 to	7.2
Short rails	11.00 to	11.5
Cast from carwheels	7.50 to	8.0
No. 1 machinery east	8.75 to	9.24
No. 1 railroad cast	8.00 to	8.54
Burnt cast	5.50 to	
Stove plate	5.50 to	
Agricultural malleable	7.50 to	8.00
Railroad malleable	8.50 to	9.00

Per gross ton delivered cor	sumer	8	yards:
No. 1 heavy melting steel.	\$9.75	to	\$10.25
No. 2 heavy melting steel.	9.25	to	9.75
Compressed sheet steel	9.25	to	9.75
Light bundled sheet stamp-			
ings	7.00	to	7.50
Drop forge flashings	8.00	to	8.50
Machine shop turnings	5.00	to	5.50
Short shoveling turnings	6.00	to	6.50
No. 1 busheling	8.50	to	9.00
Steel axle turnings	8.50	to	9.00
Low phos. billet crops	14.00		
Cast iron borings	6.25	to	6.75
Mixed borings and short			
turnings	6.25	to	
No. 2 busheling	6.25		
No. 1 cast	11.50	to	12.00
Railroad grate bars	7.00	to	7.50
Stoye plate	7.25	to	7.75
Rails under 3 ft	14.00		
Rails for rolling	15.50		
Railroad malleable			
Cast iron carwheels	10.75	to	11,00

# BUFFALO

plants:	110 0	2113	miner s
No. 1 heavy melting steel			\$10.00
No. 2 heavy melting scrap.			8.50
Scrap rails			11.00
New hydraul, comp. sheets			8.50
Old hydraul, comp. sheets			7.50
Drop forge flashings			8.50
No. 1 busheling	\$8.50	to	9.00
Hvy. steel axle turnings	8.00	to	8.50
Machine shop turnings	4.50	to	
Knuckles and couplers	11.50		12.00
Coil and leaf springs	11.50		12.00
Rolled steel wheels	11.50		
Low phos. billet crops	12.00		12.50
Short shov, steel turnings.	6.00	to	6.50
Short mixed borings and			
turnings	6.00		6.50
Cast iron borings	6.00	to	6.50
No. 2 busheling			6.50
Steel car axles	11.50		12.00
Iron axles	11.50		12.00
No. 1 machinery cast	11.00		11.50
No. 1 cupola cast	10.00		10.50
Stove plate	9.00		9.50
Steel rails, 3 ft. and under	12.50		13.00
Cast iron carwheels	11.00		11.50
Industrial malleable	12.00		13.00
Railroad malleable	12.00		13.00
Chemical borings	8.00	10	8.50
DOCTON			

BOSTON	
Dealers' buying prices per gross ton:	
*No. 1 heavy melting steel \$5.25 to \$5.25 to \$5.25 to \$5.25 to \$7.25 to \$1.25 to	\$8.50 6.00 8.50 7.50 5.00 5.00
(short)         4.00 to           Bundled skeleton, long         4.75 to           Forge flashings         4.75 to           Mixed borings and turnings         1.00 to           Shafting         12.00 to           Steel car axles         11.50 to           Cast iron borings, chemical         6.50 to           *Stove plate         5.50 to	5.00 5.50 1.50 12.50 12.00
Per gross ton delivered consumers'           Textile cast	\$9.50 9.50 6.50

<sup>\*</sup> Delivered local army base.

NEW TORK			
Dealers' buying prices per gro	88 1	ton	1
No. 1 heavy melting steel. \$7			
No. 2 heavy melting steel. *5	.50	to	\$7.00
Heavy breakable cast 6	.00	to	6.25
No. 1 machinery cast 7	.00	to	7.50
No. 2 cast			6.25
Stove plate			6.25
Steel car axles 13	.50	to	14.00
No. 1 railroad wrought ?	.00	to	7.50
No. 1 yard wrought, long.			
	.50		
Forge fire	.50		6.00
Rails for rolling 8	.50		
	.00	to	2.50
	.00		2.50
	.50		
	.00		
	.00	to	11.50
Unprepared yard fron and			
steel 4	.00	to	4.50
Dan seems for dellaward force of			

steel	4.00 to 4.5
Per gross ton, delivered local No. 1 machinery cast No. 1 hvy. cast (cupola	foundries: \$10.0
No. 2 cast	9.0 7.5

<sup>•</sup> For direct car loading only. † Loading on barge.

Per gross ton delivered o	onsumers'	yards
Heavy melting steel Scrap steel rails	10.00 to	\$9.50
Short shoveling turnings . Stove plates		7.00
Steel axles		11.50
No. 1 railroad wrought Bails for rolling		7.00
No. 1 cast	9.50 to	10.00
Tramcar wheels		10.00

# ST. LOUIS

Per gross ton delivered consumer	8.	Astas:
Selected heavy steel \$8.50	to	\$9.00
No. 1 heavy melting 8.00	to	8.50
No. 2 heavy melting 7.00	to	7.50
No. 1 locomotive tires 9.75	to	10.25
Misc. stand-sec. rails 9.25	to	9.50
	to	10.00
Bundled sheets 6.00	to	6.50
No. 2 railroad wrought 8.00	to	8.50
No. 1 busheling 5.00	to	5.50
Cast iron borings and		
shoveling turnings 3.00	to	3.50
Rails for rolling 10.00	to	10.50
Machine shop turnings 2.75	to	3.25
Heavy turnings 5.50	to	6.00
Steel car axles 12.50	to	
Iron car axles 15.00	to	16.00
No. 1 railroad wrought 6.00	to	6.50
Steel rails less than 3 ft. 11.50	to	12.00
Steel angle bars 9.50	to	10.00
Cast iron carwheels 7.00	10	7.50
No. 1 machinery cast 8.50	to	9.00
Railroad malleable 9.50	to	10.00
No. 1 railroad cast 8.00		
Stove plate 6.50	to	7.00
Agricult. malleable 8.50	to	9.00
DETROIT		

# Dealers' buying prices per gross ton: Heavy melting steel .... \$7.50 to \$8.00 Borings and short turnings 4.00 to 4.50

Lake Superior Ores Delivered Lower Lake Ports
Per Gross Ton
Old range, Bessemer, 51.50% iron\$4.80 Old range, non-Bessemer, 51.50% iron 4.65 Mesabl, Bessemer, 51.50% iron 4.65 Mesabl, non-Bessemer, 51.50% iron. 4.50 High phosphorus, 51.50% iron. 4.40
Foreign Ore

Iron, low p	has sannas		
Algeria	ron, dry 8	chamen o	. 9.50c
Iron. low pl	ios., Swedis	h, averag	8
Iron, basic			
Iron, basic	iron		
	iron		
Manganese,	Caucasian. W	ashed 52	
Manganese,	African, I	ndian, 44	0
48%			210
Manganese,			
51% Manganese, l	Dunuillian 4	4914	
manganese, 1	SIMPLIFIED, 40	2 60 3073	-

Tungsten	. domestic. s	cheelite, deliv-
eredf		17.00
		Per Gross Ton
		, crude, c.1.f.
Atlanti Chrome.	48%. CroOs	. c.i.f. Atlan-
tic Se	aboard	20.00

	Quotations	no	minal	in	absence	of	sales.
+	Nominal;	no	supplie	86	available	8.	

# Fluorspar

Per Net 1	Ton
Domestic, washed gravel. 85-5, f.o.b. Kentucky and Illinois mines for all-rail shipment	3.00
Same grade for Ohio River barge shipment for Kentucky and Illinois	
Biver landings 16	8.00
	1.00
Foreign, 85% calcium fluoride, not over 5% silicon, c.i.f. Atlantic	
ports, duty paid 19	9.00
Don.estic, No. 1 ground bulk, 95 to 98% calcium fluoride, not over	
21/2% silicon, f.o.b. Illinois and Kentucky mines 30	0.00

# COKE. COAL AND FUEL OIL

			rer	Wer	2 071
Furnace, Prompt		Connellsvill		1	3.85
Prompt		Connellsvill	.\$4.60	to	5.10
switchir	for del	duct, Chicag livery outsid rict	le .		8.50
	Chics	oduct, deliv igo switchin	g		9.25
Foundry, England	by-pr	roduct, Ne	W	1	1.00
Foundry.	By-pro	duct. Newar	9.20	to	9.65

Long turnings	\$3.50 to	84.6
No. 1 machinery cast	10.35 to	18.7
Automotive cast	10.75 to	11.1
Hydraul, comp. sheets	7.75 to	8,2
Stove plate	6.50 to	7.0
New factory busheling	6.58 te	7.4
Old No. 2 busheling	3.75 to	4.3
Sheet clippings	4.50 to	8.0
Flashings	6.75 to	7.3
Low phos. plate scrap	7.50 to	8.6

CANADA		
Dealers' buying prices per	gress 1 oronto	ion: Montre
Heavy melting steel	\$7.00	\$F.M
Rails scrap	8.00	8.84
Machine shop turnings	3.00	3.66
Boiler plate	4.50	4.88
Heavy axle turnings	4.50	4.00
Cast borings	4.00	8.59
Steel borings	2.00	2.00
Wrought pipe	3.50	3.50
Steel axles	7.00	8.60
Axles, wrought iron	7.00	8.44
No. 1 machinery cast	9.00	9.44
Stove plate	5.50	5.40
Standard carwheels	7.25	7.60
Malleable	6.75	7.00

Machine

Carriage

Nuts, al

Wire, h
100 l
Wire, g
Commor
Cement
On p
bars, l
sheets,
9999 lb
\*Delitrict.

9.60

# ORES, FLUORSPAR, COKE, FUEL, REFRACTORIES

	by-product,	
land, o	ielivered	*****
oundry.	Birmingham	*****
oundry.	by-product.	St.
Louis.	f.o.b. ovens	
oundry.	by-product,	del'd
St. Los	is	

Coal		
	Per Net	Tes
Mine run steam coal, f.o.b. W. Pa. mines	1.80 to	\$2.65
W. Pa.	2.05 to	2.25
Gas coal, %-in., f.e.b. Pa.	.25 to	
Mine run gas coal, f.s.b. Pa.	2.05 to	2.45
Steam slack, f.o.b. W. Ps.		
Gas slack, f.o.b. W. Pa.	1.90 to	2.10

		Control of the contro	
		Fuel Oil	
No.	3 4	Per Gal. f.e.b. Bayonne, N. J distillate	. 4.00c.
		Per Gal. f.o.b. Baltimere	
No.	3 4	distillateindustrial	. 4.00c. . 3.50c.
		Per Gal. del'd Chicago	
No.	35	industrial fuel oilindustrial fuel oil	3,88a 3,884
		Per Gal. f.o.b. Oleveland	
No.	3 4	distillateindustrial	5,59e. 5,25e.

# REFRACTORIES Fire Clay Brick

	Per 1000 High-heat Duty Brick	f.o.d. Weeks Intermediate Duty Brick
Pennsylvania	\$45.00	340.00
Maryland	45.00	49.00
New Jersey	45.00	49.80
Ohio Kentucky	45.00	40.00
Missouri	45.00	40.00
Illinois		40.80
Ground fire clay.		

	Si	ĺ	cı	3		E	31	i	c	k								
					1	2	er	1	£	ð	0	0	1	۲.		.1	b.	. Wa
Pennsylvania	0.0	0 0	0 0								0		0	0	0	a	0	\$45
Chicago Dist																		
Birmingham																		00
Silica clay.	Der	Y	16	ŧ	1	C	m								*	*		. 8

# Chrome Brick

Standard, f.o.b. outh Meeting Chemically Bon	and Cl	nore, Ply	8 \$45.00
more. Plymou	th Me	eeting a	49 50

# Magnesite Brick

l				Pe	r N	et Ten
ļ	Standard,	f.o.b.	Baltime	910	and	285 00
l	Chester, Chemically	Bonded.	f.o.b. F	Baltim	078	55.00

# Grain Magnesite

	f.o.b. Baltin	more and (	Per Net Ton
ter, Pa. Domestic,	f.o.b. B	Baltimore	and 345.00
Chester	fob Ches	welsh. Wa	sh. 22.00

# Warehouse Prices for Steel Products

PITTSBURGH	
Plates	Plates, 'Structura' Soft stee Iron bar Iron bar Cold-fin. Row Flat Cold-foll hard Hoops Bands Hot-roll Hot-roll Hot-roll Galvaniz Long ter Standard Wire, bi Wire, bi Common Machine All Carriage All Boiler t Lap Sea
On plates, atructurals, bars, reinforcing bars, bands, hoops and blue annealed sheets, base applies to orders of 400 to 9999 lb. *Delivered in Pittsburgh switching district.	*No.
CHICAGO Base per Lb.	Plates a Bars, so Cold-fin.
Soft steel bars 2.95c.	stocks Hot-roll
Plates and structural shapes	Hot-roll Galv. sh Hot-roll Black co *Galv. Structur Boller r
Rounds and hexagons   3.50c.   Flats and squares   3.50c.   Hot-rolled strip   3.80c.   Hot-rolled annealed sheets (No. 24)   3.85c.   Gals, sheets (No. 24)   4.55c.   Hot-rolled sheets (No. 10)   3.05c.   Spikes (keg lots)   4.65c.   Rivets, structural (keg lots)   4.65c.   Rivets, structural (keg lots)   3.75c.   Rivet	Hot-roll Galv. sl Hot-roll Black et *Galv. Stiuctur Boiler i Tank ri Machine fitting hot-or tapped
Rounds and hexagons   3.50c.   Flats and squares   3.50c.   Hot-rolled strip   3.80c.   Hot-rolled annealed sheets (No. 24)   3.85c.   Gals, sheets (No. 24)   4.55c.   Hot-rolled sheets (No. 10)   3.05c.   Spikes (keg lots)   4.65c.   Rivets, structural (keg lots)   4.65c.   Rivets, structural (keg lots)   3.75c.   Rivet	Hot-roll Galv. st Hot-roll Black e 'Galv. Stiuctur Boiler r Tank ri Machine fitting hot-nn tapper All qua
Rounds and hexagons 3.50e. Filats and squares 3.50e. Hot-rolled strip 3.85e. Hot-rolled annealed sheets (No. 24) 3.85e. Galv. sheets (No. 24) 4.55e. Galv. sheets (No. 24) 4.55e. Hot-rolled sheets (No. 10) 3.05e. Spikes (keg lots) 3.50e. Track bolts (keg lots) 3.65e. Rivets, structural (keg lots) 3.65e. Rivets, structural (keg lots) 3.65e. Rivets, soller (keg lots) 3.75e.  Machine bolts 9er Cent Off List Machine bolts 970 Carriage bolts 970 Carriage bolts 970 Hot-pressed nuts, sq. tap or Hot-pressed nuts, sq. tap or Hot-pressed nuts, hex. tap or blank 970 Hot-pressed nuts, hex. 180 or 180 hot pressed nut	Hot-roll Galv, si Hot-roll Black e "Galv, Stuctur Boiler 1 Tank ri Machine fitting hot-nr tappee All qua "No. "Plates, "Structur Soft si hars Reinfound Cold-fin Cold-fin Cold-fin Cold-fin Calver Cal
Rounds and hexagons 3.50e. Filats and squares 3.50e. Hot-rolled strip 3.50e. Hot-rolled annealed sheets (No. 24) 3.85e. Galv. sheets (No. 24) 4.55e. Hot-rolled annealed sheets (No. 24) 3.65e. Galv. sheets (No. 24) 4.55e. Hot-rolled sheets (No. 10) 3.05e. Track bolts (keg lots) 3.50e. Track bolts (keg lots) 3.65e. Rivets, structural (keg lots) 3.65e. Rivets, structural (keg lots) 3.65e. Rivets, boller (keg lots) 3.75e.  Machine bolts 970 Carriage bolts 970 Carriage bolts 970 Hot-pressed nuts, sq. tap or Hot-pressed nuts, sq. tap or Hot-pressed nuts, hex, tap or Blank 70 Hot-pressed	Hot-roll Galv, st Hot-roll Black e "Galv. Stuetur Boller I Tank ri Machine fitting hot-roll Hotological Wall qua "No. "Plates, structur Soft st Reinfood-fin "Steel I incl. String † Hot-rolf Galvan
Rounds and hexagons 3.50e. Filats and squares 3.50e. Hot-rolled strip 3.85e. Hot-rolled annealed sheets (No. 24) 3.85e. Galv. sheets (No. 24) 4.55e. Galv. sheets (No. 24) 4.55e. Hot-rolled sheets (No. 10) 3.05e. Spikes (keg lots) 3.50e. Track bolts (keg lots) 3.65e. Rivets, structural (keg lots) 3.65e. Rivets, structural (keg lots) 3.65e. Rivets, soller (keg lots) 3.75e.  Machine bolts 9er Cent Off List Machine bolts 970 Carriage bolts 970 Carriage bolts 970 Hot-pressed nuts, sq. tap or Hot-pressed nuts, sq. tap or Hot-pressed nuts, hex. tap or blank 970 Hot-pressed nuts, hex. 180 or 180 hot pressed nut	Hot-roll Galv, st Hot-roll Black c "Galv. Stuctur Boiler I Tank ri Machine fittins fittins fittins fittins fittins and "No." Structur "Soft st bars 2 Reinfordand Cold-fit "Street I Structur "Soft st bars 2 Reinfordand Cold-fit "Street I Thot-roll Galvan "Hot-roll Diam "Hot-ro

87.00 8.00 3.00 4.00 8.00 2.00 8.00 8.00 8.00 8.00 7.00 7.00

8.00 9.80

er Net Tes

to 1.55 5 to 2.45 5 to 1.65 0 to 2.10

J. ... 4.00c. ... 8.50c.

.. 4.08c.

.. 3.88a. .. 3.88a.

b. Works strmediate uty Brick \$40.00 43.00 40.00 40.00 40.00 40.00

Net Ten . \$45.00 . 42.50

Net Ten d . \$65.90 e 55.00

Nat Ton \$45.00 1 40.00 22.00

DITTORIDO	NEW YORK
PITTSBURGH Base per Lb.	NEW YORK Base per Lb.
Plates 3.15c. Structural shapes 3.15c. Structural shapes 3.15c. Structural shapes 2.90c. Reinforcing steel bars 2.90c. Reinforcing steel bars 2.90c. Cold-finished and screw stock: Rounds and hexagons 3.20c. Squares and flats 3.20c. Hoops and bands under ¼ in 3.20c. Hot-rolled annealed sheets (No. 24), 25 or more bundles 3.30c. Galv. sheets (No. 24), 25 or more bundles 3.95c. Hot-rolled sheets (No. 10) 2.95c. Galv. corrug. sheets (No. 28), per square (more than 3750 lb) \$3.69 Spikes, large 7.90c. Track bolts, all sizes, per 100 count, 65 per cent off list. Machine bolts, 100 counts, 65 per cent off list. Nuts, all styles, 100 count.	Plates, ¼ in. and heavier.
Large rivets, base per 100 lb\$3.50 Wire, black, soft ann'l'd, base per 100 lb\$3.50 Wire, black, soft ann'l'd, base per 100 lb\$2.925 Common wire nails, per keg\$2.834 Cement coated nails, per keg\$2.834 On plates, structurals, bars, reinforcing	Machine bolts, cut thread: Off List All diameters 65 and 10
bars, bands, hoops and blue annealed sheets, base applies to orders of 400 to 9999 lb. *Delivered in Pittsburgh switching dis-	*No. 28 and lighter, 36 in. wide, 20c. higher per 100 lb.
trict.	ST. LOUIS
·	Plates and struc. shapes 3.44c. Bars, soft steel or iron 3.19c.
CHICAGO   Base per Lb.	Cold-fin. rounds. shafting, screw stocks 3,74c. Hot-rolled annealed sheets (No. 24) 4.09c. Galv. sheets (No. 24) 4.6c. Hot-rolled sheets (No. 10) 3.29c. Black corrug. sheets (No. 24) 4.09c. "Galv. corrug. sheets 4.6c. Stuctural rivets 3.9e. Boiler rivets 4.09c. Boiler rivets 4.09c. Thank rivets, 7/16 in. and smaller 55 Machine and certiage boilts, lag screws fittings up boits, boilt ends, plow boits, hot-pressed nuts, square and hexagon, tapped or blank, semi-finished nuts: All quantities 70
Hot-pressed nuts, sq. tap. or	PHILADELPHIA
Machine bolts	*Plates. ¼-In. and heavier 2.95c. *Structural shapes 2.95c. *Structural shapes 2.95c. *Soft steel bars. small shapes, iron bars (excent bands) 2.90c. *Reinfore. steel bars. sq. twisted and deformed 2.95c. Cold-finished steel bars 3.73c. *Steel honos 3.40c. *Steel honos 3.40c. *Steel bands, No. 12 and 3/16 in. incl 3.15c. Snring steel 3.15c. Snring steel 3.15c. Snring steel 4.25c. *Hot-rolled anneal. heets (No. 24) 2.55c. *Galvanized sheets (No. 24) 4.25c. *Hot-rolled annealed sheets (No. 10) Diam. nat. floor plates. ¼ in. 4.95c. Swedish iron bars 4.95c. These prices are subject to quantity differentials except on reinforcing and Swedish iron hars. *Rase prices subject to deduction on orders argregating 4000 ib. or over. **For 50 bundles or over. **TFor less than 2000 ib.

CLEVELAND
Base per Lis.  Soft steel bars 3.31c.  Soft steel bars 2.95c.  Reinforc. steel bars 2.10c. Cold-finished steel bars 3.36c. Flat-rolled steel under ¼ in. 3.36c. Cold-finished sterly 3.36c. Cold-finished sterly 3.36c. Cold-finished strip 4.4 in. 3.36c. Cold-finished strip 4.4 in. 3.36c. Cold-finished strip 5.3 in. Cold-finished strip 5.3 in. Cold-finished strip 6.3 in. Cold-finished 5.3 in. Co
CINCINNATI
Base per Lb.
Base per l.b.
BOSTON
Base per Lb.

Cold-Enished flats Blue annealed sheets, No. 10 ga One pass cold-rolled sheets No. 24 ga. Galvanized steel sheets, No. 24 ga. Lead coated sheets, No. 24 ga.	3.65c. 4.20c. 4.90c.
Prices delivered by truck in metro Boston, subject to quantity differe	

MILWAUKEE	
Base p	er Lb.
Plates and structural shapes	3.31e.
Soft steel bars	3.06c.
	3.41c.
	3.16c.
	3.96e.
	4.66c.
	3.61c.
	3.30e.
	3.86c.
	3.96c.
	3.71c.
Track bolts (keg lots)	4.8fie.
	3.10e.
Com. wire nails	2.90c.
Cement coated nails	
Per Cent O	
Machine bolts	
Carriage bolts	
Hot-pressed nuts, sq. and hex., tapp	sed
or blank (keg lots)	70
	-

Prices given above are delivered Mil-waukee. On plates, shapes, bars, hot-rolled strip and heavy hot-rolled sheets, the base am-plies on orders of 400 to 9999 lb. On gal-vanized and No. 24 hot-rolled annealed sheets the prices given apply on order of 400 to 3499 lb. On cold-finished hars the prices are for orders of 300 to 499 lb.

PACIFIC	COA	ST	
	Ba	se per I	b.
	San		
	Fran-		
		ingeles	Seattle
Plates, tank and			
U. M		3.60c.	
Shapes, standard			
Soft steel bars	3.60c.	3.60c.	3.60c.
Reinforcing bars,			
f.o.b. ears dock	0	0 45.	0.45-
Pacific ports Hot-rolled annealed	2.40c.	Z.40C.	2.40e.
sheets (No. 24)	4.400	4.35c.	A 40m
Hot - rolled sheets	4. 40C.	1.000.	2. 200.
(No. 10)	2 750	3.70c.	2 75e
Galv. sheets (No.	0.100.	0.100.	W. P CPC.
24)	5.00c.	4.95c.	5.00c.
Cold finished steel:	010001	Nines.	41444
Rounds	5.95c.	5.85c.	6.00c.
Squares and			
hexagons	7.20c.	7.10c.	7.25c.
Flats	7.70c.	7.60c.	8.25c.
Common wire nails			
-base per keg			
less carload	. \$3.30	\$3.40	\$3.30
All items subject	to di	merentia	113 for
quantity.			

# TOOL STEEL

Floor plates, diamond pattern b. 3nc.	Prices are same for warehouse distribu-
Bar and bar shapes (mild steel) 3.35c.	tion at all points on or East of Mississippi
Bands 3/16 in. thick and	River. West of Mississippi quotations are
No. 12 ga. incl 3.65c. to 4.65c.	le. a lb. higher.
Half rounds, half ovals, ovals and	Base per Lh.
hevels 4,60c.	High speed 57c.
Tire steel 4.60c.	
Cold-rolled strip steel3.245c.	Oil hardening 22e.
Cold-finished rounds, squares and	Extra 17c.
hexagons	Regular 14c.

# Weekly Indications of Steel Activity

	From '	THE IRON A	GE			verage, to Date,
M	ay 7, 1935	Apr. 30, 1935	Apr. 9, 1935	May 8, 1934	1935	1934
Steel ingot operations-Per cent of capacity		46.0	46.0	60.0	48.4	44.8
		Week Ended			Year	to Date
M	ay 7, 1935	Apr. 30, 1935	Apr. 9, 1935	May 8, 1934	1935	1934
Fabricated structural steel awards	10.200	15,250	10,600	25,800	256,988	304,395
Fabricated plate awards		500	2,850	2,435	36,485	38,442
Sheet steel piling awards		0	0	2,000	11,965	20,670
Reinforcing has awards		2.800	1.800	4,860	87,730	78,845

# Spelter Prices Advanced \$2 a Ton on Strength of Favorable April Statistics

Lead Market Very Firm With Advance in Quotations Predicted—Copper Sales Lag-Tin Quiet and Slightly Easier

IEW YORK, May 7 .- The copper market continues to be very dull. Sales thus far in the month have amounted to less than 4500 tons, including a total of about 600 tons yesterday. In the corresponding April period, transactions were averaging at least 1000 tons daily. The current consumer disinterest is rather difficult to interpret in view of the fact that NRA reorganization is not expected to affect the copper code. Copper certainly qualifies as a natural resource industry and none of the ideas suggested for revision of the recovery act calls for disturbing of the codes in such industries. The Blue Eagle price of 9c. a lb., delivered Connecticut Valley, is holding and the price at London this morning was 7.80c. a lb., usual Continental base ports.

The London market was closed yesterday in observance of the Silver Jubilee and little business was transacted in New York. In fact, activity here has been considerably restricted over the entire past week, and price fluctuations have been confined to 50 points. market today is quotable at 50.50c. a lb., compared with 50.75c, a lb. one week before. Standard tin was quotable in London this morning at £224 15s. for spot and £219 5s.

for futures. Straits at London was available at £233 15s, and the market in the East was £230 10s. The trade is showing considerable interest in the proposed McReynolds bill, ostensibly designed to create a domestic tin industry. Opposition to most features of the bill is rather general and it is believed that the legislation will not be passed at this session of the Congress.

Despite the very firm position of the current market, quotations have not been advanced and lead is still quotable at 3.60c. a lb., St. Louis, and 3.75c., New York. The leading interest is still getting a \$1 a ton premium on sales in the East. Available lead is usually booked in the first half hour of trading each morning and sellers ordinarily withdraw from the market by advancing their asking price immediately afterward. April statistics will not be released for several days, but the trade is convinced that shipments of 40,000 to 45,000 tons will result in a considerable reduction in stocks. Under the circumstances, higher quotations in the near future seem inevitable.

## Zinc

Spelter quotations were marked up \$2 a ton yesterday and now stand at 4.20c. a lb., East St. Louis, and 4.55c., New York. The emergency increase in freight rates which was effective last month has also added approximately 21/2c. a lb. to the New York quotation, and, effective May 1, this will be recognized in the prices quoted in THE IRON AGE. The price advance preceded the publication of April statistics this morning, which showed a decrease in stocks of approximately 3000 tons. This was somewhat below expectations, but was considered very satisfactory. Production last month amounted to 35,334 tons and shipments were 38,460 tons. Sales are still comparatively heavy, transactions last week having amounted to 6800 tons, compared with only 1700 tons in the preceding period. Large bookings have also been reported in the last two days. Ore prices are still unchanged at \$25 and \$26 a ton. Sales last week were about 7500 tons, compared with shipments of 7900 tons and production of 8700 tons.

Eastern Malleable Iron Co. will close its plants at New Britain and Bridgeport, Conn., and Troy, N. Y., and will concentrate operations at Naugatuck, Conn., and Wilmington, Del.

## The Week's Prices. Cents Per Pound for Early Delivery

	May 1	May 2	May 3	May 4	May 6	May 7
Electrolytic copper, N. Y.*						8.75
Lake copper, N. Y	9.12 1/2	9.12 1/2	9.12 1/2	9.12 1/2	9.12 1/2	9.12 1/2
Straits tin, spot, New York	50.87 1/2	50.37 1/2	50.37 1/2		50.50	50.50
Zinc, East St. Louis	4.10	4.10	4.10	4.10	4.20	4.20
Zinc, New York†	4.47 1/2	4.47 1/2				4.57 1/2
Lead, St. Louis					3.60	3.60
Lead, New York	3.75	3.75	3.75	3.75	3.75	3.75

\*Refinery quotations; price ½ c. higher delivered in Connecticut. †Includes emergency freight charge.

Aluminum, virgin 99 per cent plus, 19c. to 22c. a lb., delivered. Aluminum, remelt No. 12 (alloy), carload lots delivered, 14c. a lb., average for

week.

Nickel, electrolytic, 35c. to 36c. a lb. based at refinery in lots of 2 tons or more.

Antimony, 14.25c. a lb., New York.

Brass ingots, 85-5-5-5, 8.25c. a lb., New York and Philadelphia.

## From New York Warehouse

Delivered Prices, Base	per Lb.
Tin, Straits pig51.75c.	
Tin, bar53.75c.	
Copper, Lake10.25c.	to 11.00c.
Copper, electrolytic 10.00c.	to 10.50c.
Copper, castings 9.75c.	to 10,75c.
*Copper sheets, hot-	
rolled	16.00c.
*High brass sheets.	14.25c.
*Seamless brass	
tubes	16.00c.
*Seamless copper	
tubes	16.25c.
Brass rods	12.75C.
Zinc, slabs 5.75c.	to 6.75c.
Zinc, sheets (No. 9),	
easks, 1200 lb.	
and over Lead, American pig. 4.50c.	10.25c.
Lead, American pig. 4.50c.	to 5.50c.
Lead, bar 5.50c.	to 6.50c.
Lead, sheets	
Antimony, Asiatic 15.50c.	to 16,50c.
Alum., virgin, 99 per	00.00
cent, plus	23.30c.
Alum., No. 1 for re- melting, 98 to 99	
per cent 18,00c.	to 10 00a
Solder, 1/2 and 1/2 30.00c.	to 13.00C.
Babbitt metal, com-	to ar. ooc.
mercial grades25.00c.	to 60 00a
B. ades 20.00C.	to 00.00C.

ese prices are also for delivery Chicago and Cleveland ware-

# From Cleveland Warehouse

 Delivered Prices per Lb.

 Tin, Straits pig.
 54.87½c.

 Tin, bar
 56.87½c.

Copper, Lake
Copper, electrolytic 10.00c.
Copper, castings 9.75c.
Zinc, slabs5.50c. to 5.75c.
Lead, American pig4.50c. to 4.75c.
Lead, bar
Antimony, Asiatic 16.50c.
Babbitt metal, medium grade. 18,50c.
Babbitt metal, high grade 58.87 1/2 c.
Solder, ½ and ½ 31.75c.

# Old Metals, Per Lb., New York

Buying prices are paid by dealers for miscellaneous lots from smaller accumulators, and selling prices are those charged to consumers after the metal has been prepared for their uses. (All prices are nominal.)

	Dealers' Buying Prices	Dealers' Selling Prices
Copper, hvy, cruci- ble	5.87 1/2 c.	6.62 ½ c
Copper, hvy. and wire Copper, light and	5.75c.	6.25c.
bottoms Brass, heavy	4.75c. 3.12 %c.	5.25c. 3.75c.
Brass, light Hvy. machine com-	2.37 ½ c.	3.12 ½ c.
position No. 1 yel. brass	4.62 ½ c.	5.12 ½ c.
turnings No. 1 red brass or	4.12 ½ c.	4.62 ½ c.
compos. turnings	4.37 ½ c.	4.87 1/2 c.
Lead, heavy	2.62½c. 2.00c.	3.00c. 2.37 ½ c.
Cast aluminum	10.12 1/2 c.	
Sheet aluminum	11.50c.	13.00c.

# Finished Steel Demand Is Still Falling at New York



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g il Movement of Heavy Products Depends Almost Entirely upon Speed of Federal Program — Freight Situation Still Confused

EW YORK, May 7.—The new month has got under way very inauspiciously in this district. Finished steel orders in the past week have generally been smaller than in the preceding seven-day period, and further contraction is looked for in most quarters. Tin plate specifications are well maintained in some instances, but demand is spotty and seems to depend largely upon the releases of a few very large consumers.

The Harlem River crossing of the Triborough Bridge is the only large structural steel project pending in the district. Bids on this job will be taken May 16. Inquiry for the remaining large section of this job will probably appear about June 1. Likewise, plans for the New York approach to the Midtown tunnel may be delayed for a few weeks. Funds have already been appropriated for these projects and other large construction jobs in this territory will probably be delayed until the new emergency relief fund begins to be spent.

The railroads are doing little buying, although a Colombian carrier is in the market for 35 box, 17 gondola, 15 stock and 5 flat cars, as well as 21 coaches, two baggage, three restaurant and four rail motor cars. This road has already opened bids on four to eight locomotives. The Chinese government is also inquiring for 36 locomotives.

Miscellaneous demand for sheets, strip steel and other lighter products, has tapered along with general business. Orders call for even smaller quantities than heretofore and uncertainty attending the NRA extension and the future of the steel code are unquestionably factors.

The freight rate situation is still somewhat confused by the failure of some States to raise intrastate rates in accordance with the ICC emergency order.

# Pig Iron

Jobbing foundries in this immediate area are operating on slightly better schedules, following a three-

week lull in activity. District sales of iron, however, continue to reflect industrial uncertainty and unwillingness on the part of melters to take on forward supplies until third quarter prices become a certainty and the future status of the steel code is clarified. Total bookings of furnace representatives during the past seven-day period amounted to 1350 tons, as compared with 1500 tons in the preceding weekly period and 1250 tons sold a fortnight ago. This district has afforded a poor outlet for foreign iron since the turn of the year. Nevertheless, Amtorg Trading Corpn. has landed 1400 tons of Russian iron at Port Newark for nearby distribution by Leonard J. Buck, Inc., prominent seller of foreign ores.

# Reinforcing Steel

Deliveries of small lots of bars and mesh to private and public projects are sustained at a fairly satisfactory level. New business of over 100 tons is, however, very scarce, and local distributers are anxiously awaiting some break in the long delayed seasonal upturn in highway construction demands. The emergency freight charges have lifted billet and rail steel bars to 2.50c. and 2.35c. a lb. respectively, for truck deliveries to jobs in this territory.

## Scrap

What little domestic business was in the market last week has now practically disappeared. Nevertheless the local market continues quite firm on the basis of steady purchasing for export. Brokers are still hampered by the lack of Japanese bottoms and by the high rates demanded for boats that are available. Currently one boat is loading steel for Japan, and another is being loaded with turnings in Brooklyn for shipment to the United Kingdom. A cargo of steel for Italy has just cleared. Although the exchange difficulties with Italy have not been entirely cleared up, there is increasing willingness apparent on the part of brokers to release shipments to that country. During the past week a Japanese house completed a purchase of 40,000 tons of scrap rails, part of which will be shipped from the New York-Philadelphia

# Demand Declines In Southern Ohio

INCINNATI, May 7.—Strikes in the automotive industry have been reflected in a sharp decline in pig iron demand. Bookings have dropped from 1000 tons weekly to about 600 tons, as a result of a sudden reduction in melt, particularly among jobbing foundries. Reports from stove foundries, however, indicate a continued good melt. Movement of Southern iron into southern Ohio is improving slightly since the imposition of the emergency freight rate. Southern furnaces have absorbed the rate advance and are adhering to the 38c. differential. Heavy ordering is absent, consumers covering only for urgent needs.

Demand for finished sheets has dipped sharply. Some automotive users have curtailed specifications in the face of labor difficulties. Mill bookings average about 55 per cent of capacity, a drop of almost 30 per cent from the previous level. Backlogs, built up during the pre-

vious two weeks, will justify rolling schedules of about 70 per cent this week, with the following week reflecting the decline in business. Prices, except for minor fluctuations on rejects and wasters, remain firm.

Demand for fabricated steel is improving. Warehouse business, which has been supported by a steady industrial demand for steel for some time, has been augmented by a moderate flurry of construction orders. April bookings of jobbers were on a higher level than those of March, and early indications for May are favorable.

Foundry coke prices have been established on an Ashland, Ky., base for shipment into this area, bringing new quotations to \$9.45, delivered in Cincinnati. Industrial demand reflects the usual seasonal tapering.

Scrap dealers refuse to move scrap on present schedules and mills decline to pay higher prices. Bids are unchanged. The Baltimore & Ohio and Chesapeake & Ohio railroads are offering their usual lists.

THE IRON AGE, May 9, 1935-75

# Production Drops Further In Cleveland Area



Current Rate Is 45 Per Cent—Erie Places 16,880 Tons of Rails—Strike Called in Iron Range

LEVELAND, May 7 .- Shipments of finished steel, particularly sheets and strip, and finishing mill operations suffered a sharp setback as a result of the holding up of shipments because of labor troubles that caused the shutting down of Chevrolet plants and the Fisher Body plant in Cleveland, and the curtailment of jobbing stamping plants making Chevrolet parts. This caused a three-point decline this week in the ingot output in the Cleveland-Lorain territory to 45 per cent of capacity. Two open-hearth furnaces were taken off in Cleveland, one by each active steel works, but in Lorain, where there has been a slight pickup in steel orders, another openhearth furnace was put on.

The expectation that the vote of the Chevrolet employees in Toledo, Wednesday, will result in calling off the strike and the resumption of normal operations by that company and the suppliers of its parts has driven away much of the pessimistic feeling that was aroused a week ago by the cutting off of shipments of steel for Chevrolet cars. The reinstatement of all the suspended orders is expected promptly when the strike is ended.

Demand for steel from automobile companies aside from Chevrolet is well maintained and business is holding up fairly well from other sources, although activity in sheets shows a slightly downward tendency. Manufacturers of refrigerators and other household equipment are not ordering in as large volume as recently. Rail purchases pending for some time have been made. The Erie Railroad, Monday, allocated 16,880 tons of rails to four mills and has placed orders for about 5235 tons of track material, including spikes, tie plates, joint bars and rail anchors, this business being distributed among quite a number of manufacturers.

Activity in the construction field is still confined largely to public work. An award of 580 tons of reinforcing bars has been made for dam construction connected with the Muskingum district conservancy project, and new inquiries for 673 tons have come out for the same project.

# Pig Iron

Delay in making the advance in freight rates on intrastate business has stimulated shipping orders from some foundries receiving iron from furnaces in their own States. The old intrastate rate in Ohio will remain in effect at least until May 13, when the Interstate Commerce Commission will hold a hearing in Columbus and is expected to force the Ohio Public Utilities Commission to advance the rate. Sales are light. While there is some talk of a 50c. a ton advance for the third quarter because of the increased cost of making iron due to the freight rate advance on raw material, producers are keeping in mind the possible greater use of scrap should pig iron be advanced.

## Sheets

Finishing mill operations have been curtailed considerably by the holding up of shipments to the Fisher Body plant in Cleveland, to Chevrolet plants and to some other stamping plants making Chevrolet parts. Purchase of considerable tonnage by the local Fisher Body plant is expected soon after the Chevrolet labor troubles are settled. The Newton Steel Co. has virtually adjusted labor troubles which caused a strike at its Monroe, Mich., plant and expects to resume operations next week.

# Strip Steel

While shipments to some of the plants making Chevrolet parts have either been cut down or entirely suspended, others doing Chevrolet work have not held up shipments. Demand from other consumers in the automotive field is not holding up to recent volume. Miscellaneous orders are scarce.

## Iron Ore

Setting the best record for the month since 1929, ore shipments in

April were 400,062 tons. Shipments were made from every port except Duluth and from all docks at other ports except one at Superior. The Ford Motor Co. has purchased approximately 180,000 tons of ore, which was divided among three or more sellers. Most all the consumers having affiliation with mining companies have placed orders for ore for the season, in many cases specifying the maximum amount called for under their long term contracts. Labor troubles are threatened in the Gogebic and Menominee district mines. Miners affiliated with the American Federation of Labor have called a strike in the Gogebic Range effective May 13, and similar action is expected in the Iron River district. Troubles may extend to the Mesabi Range where union employees of some of the mines have made demands. Gogebic Range union miners are demanding changes in hours that would amount to a reduction in actual working hours from 8 to 61/2 hr. per day and a 50 per cent wage increase. Underground mines have large stock piles and probably would shut down should labor troubles arise.

# Bolts, Nuts and Rivets

Shipments to the automotive industry have been curtailed considerably by the holding up of orders by Chevrolet units. Demand from other consumers and by jobbers continues good. The industry is operating at about 45 per cent of capacity. Demand for rivets has slackened.

# Bars, Plates and Shapes

Orders for merchant bars have declined, largely because of the curtailment of the automotive demand. For the Beach City dam, in connection with the Muskingum district conservancy project, 580 tons of reinforcing bars have been awarded. It is understood that these will be supplied by a Kansas City mill. New inquiries in connection with the same project call for 673 tons of bars. G. A. Fuller Co. was low bidder for a Cleveland housing project taking 1000 tons of bars. An Ohio fabricator has taken a Baltimore & Ohio bridge in Leroy, N. Y., requiring 250 tons of structural steel.

## Scrap

The market is firm but inactive. Dealers are paying \$10.75 to \$11 for No. 1 heavy melting steel and \$9.75 to \$10.25 for No. 2 for shipment to Youngstown mills against outstanding contracts. There is no demand for delivery to Cleveland mills. Considerable scrap is being shipped here by water from Detroit.

# Consumer Purchases Taper Off in Eastern Pennsylvania



New Barrel Companies to Locate Here
—Nearby Consumers Purchase Russian
Iron — Steel Scrap Sold at \$10.50

DHILADELPHIA, May 7.—The steel fraternity here is looking forward to a strong market in the late summer months but, on the other hand, sellers are considerably discouraged by a widespread slackening of consumer demands which has been very noticeable during the past week. Not only have the immediate needs of miscellaneous users shown indications of tapering to a smaller volume, but sellers of full-finished sheets report a contraction of shipments to local autobody plants which in turn are affected by the scattered automobile strikes in the Middle

Total mill operations in eastern Pennsylvania remain at 32 per cent of capacity. Alan Wood Steel Co. has added an additional furnace, but ingot output is now larger than rolling demands. Pencoyd is operating its smaller structural mill only one turn daily and has reduced its melting units to three, and Bethlehem's Steelton plant is expected soon to shut down the three furnaces now operating. The volume of orders now on mill books indicates that little or no improvement in the district operating rate can be expected over the remainder of the quarter.

Inasmuch as fabricating demands here are now quite small, sellers are enthusiastic over the probable location of three beer barrel and steel container plants in this immediate territory. The Manion Steel Barrel Co. of Oil City, Pa., will probably remove its barrel department to this city and thus form an outlet for over 10,000 tons of light plate yearly. Still another barrel shop will soon be in operation in a nearby city, and an announcement of a third plant to locate in Philadelphia is expected within the next fortnight.

# Pig Iron

Jobbing foundries continue to operate on an average of two to three days each week, and several larger foundries making machinery, etc., are melting on full schedules. Iron sellers report current bookings as on a par with those of

April, which month was slightly better than March and much better than April a year ago. The new emergency freight charges are now applicable to intrastate shipments and have raised carload prices of pig iron to \$20.3132, \$20.8132, \$19.8132, and \$21.3132 per gross ton for No. 2 foundry, malleable, basic, and Bessemer grades respectively, delivered in this area. About 1400 tons of Russian iron has been landed at Port Newark. It is stated that 500 tons will be delivered to Burlington, N. J., 200 tons to a Baltimore melter, and the remainder is being offered to the trade at an attractive price.

## Sheets and Strip

Instead of a seasonal upturn in demand for blue annealed grades, sellers report a slight contraction From the nature of curin sales. rent small-lot orders for overnight shipment, it is evident that customers have pared purchases to an absolute minimum as a precaution against possible price reductions for third quarter. Blue annealed sheets are now priced at 2.16c. per lb. at Philadelphia. Contract deliveries on full-finished sheets are keeping pace with expectations, but autobody stamping plants have reduced fresh ordering to some extent to counteract the slackening of autobody deliveries into strike areas. Light cold-rolled sheets are now quoted at 3.26c. per lb., delivered to local consumers. The demand for strip continues to be very The emergency freight rate light. has lifted this grade by 0.02c. per lb. to 2.91c., delivered at Philadelphia.

# Bars, Plates and Shapes

Sellers of shapes look forward to a number of Federal-financed projects that will come up for bidding during June. The present market, however, is almost devoid of activity. No award of any size was made during the week, and new business has been confined to routine small tonnages. The Library of Congress annex, Washington, D. C., is again up for bids, with tenders due on May 15. This

project calls for 5000 tons of shapes and about 2000 tons of book racks. The emergency freight charges have lifted the delivered price on shapes to 2.015c. per lb. Routine miscellaneous demands for plates are about equal to those of several weeks ago. No action has yet been taken on requirements for the Erie ferryboat or the two Gulf Oil Co. tankers. Tank plates are now 1.99c. a lb. at Philadelphia, with carload freight and emergency charges allowed from Coatesville. No award of over 100 tons of reinforcing bars was made during the week. The one new project of any consequence calls for 200 tons for a textile factory at Allentown, Pa. Billet and rail steel bars are now quoted at 2.46c. and 2.31c. a lb. respectively, delivered by truck in carload lots to projects in this area.

## Imports

The following iron and steel imports were received here last week: 7700 tons of chrome ore from French Oceania, and 99 tons of steel bars, 16 tons of structural shapes and 5 tons of steel bands from Belgium.

## Scrap

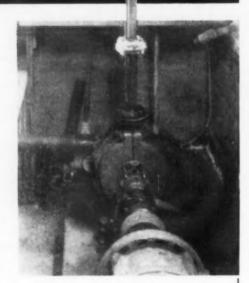
Although Worth Steel Co. has bought 5000 tons of No. 1 steel at \$10.50, no other consumer in this territory has shown any desire to make a similar purchase. Consequently the domestic scrap market has returned to its usual inactive state, with prices as quoted supported almost entirely by the steady buying of steel for export. One Japanese boat has taken 5000 tons of steel from Port Richmond, and over 6000 additional tons will be shipped out during the next week. As a result the excessive accumulation of scrap at that point is being slowly cleaned up. Brokers continue to pay \$9.50 and \$8.50 a ton for No. 1 and No. 2 steels respectively, for export. Likewise, Bethlehem continues to pay \$10 at Baltimore for No. 1 steel delivered at Sparrows Point, Md., and \$9.50 for small lots from dealers located close to Bethlehem and Steelton, Pa. Japanese mills have recently purchased a large tonnage of scrap rails in this country. It is expected that a portion of this order will leave by way of Port Richmond.

Simplified Practice Recommendation R45-32, referring to grinding wheels, has been reaffirmed, without change, by the standing committee of the industry. Copies of the recommendation may be obtained from the Superintendent of Documents, Government Printing Office, Washington.

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# Exports Dominate Boston Scrap Mart

BOSTON, May 7.—Interest in scrap still centers in the export market which is fairly active. A small tonnage of No. 1 steel was sold the past week at \$9 a ton, delivered loading wharf, but most sales were at \$8.50, while No. 2 steel brought \$7.50. For short steel turnings \$4 to \$4.50 a ton, delivered wharf, was paid, and for stove plate and burnt iron \$5.50 to \$6. Steel turnings are practically the only material being shipped to Pittsburgh district. A steamer has been chartered here to load scrap for Galatz, Rumania, at a mini-

mum rate of \$3.30 a ton. A steamer is expected at Providence, R. I., today to load 2300 tons for an English port, and another late this month will take a small tonnage of No. 1 steel. The British ship Cingalese Prince, expected here May 17, will go to a Gulf port to load scrap for Japan.

The pig iron market continues to drift along aimlessly. The melt in Connecticut is somewhat smaller than a month ago, while in the rest of New England it is not much more than 15 per cent of rated capacity. Textile machinery makers have some South American business, but used equipment makes up the bulk of shipments there. The lack of home building is felt by the stove industry.

At the moment there is less pending and prospective reinforcing steel bar, structure steel and cast iron pipe tonnage in this territory than noted in a long time.

# Operations Rise At Buffalo

DUFFALO, May 7.—While the Lackawanna plant of the Bethlehem Steel Corpn. continues to operate six open-hearth furnaces, the Republic Steel Corpn. has increased the number of its active furnaces from three to four. Wickwire-Spencer Corpn. is operating one. The Seneca sheet division of Bethlehem is running at 75 per cent of capacity.

Buffalo structural steel fabricators are taking small lots running into fair aggregate tonnage. A 500-ton bridge job in Greene County, N. Y., will be readvertised. A school in Olean, N. Y., will require 800 tons. A County of Erie, N. Y., tunnel job at Wende penitentiary will require 100 tons of reinforcing bars.

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Republic Steel Corpn. has added another blast furnace, making two in operation at this plant. Pig iron business is mostly confined to carload lots. The flurry of business brought about by the increased freight rates is about over. April pig iron business was slightly better than March, and each month this year has shown small improvement.

Scrap transactions are light. A large mill continues to offer \$10 for No. 1 heavy melting steel, but apparently is getting little tonnage at this figure. Dealers are unable to buy at \$9. There is very little shipping and dealers are inclined to feel scrap is a better buy today than a sale. One mill bought 200 tons of No. 1 and No. 2 steel at \$10 and \$9. Cupola cast has been sold at nearby points at \$11 and short rails have been sold at \$13. Strengthening of turnings at \$13tsburgh would affect the market here if there were any buying, but there is not.

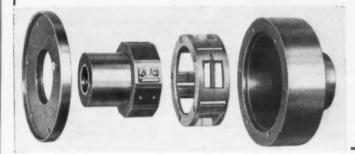
# Bids on St. Louis Post Office Postponed

ST. LOUIS, May 7.—The taking of bids for the superstructure of the St. Louis post office has been postponed to May 28. The project will require 7500 tons of structural steel and 1500 tons of reinforcing bars.

Business in finished iron and steel has been holding up fairly well in the last two weeks, al-

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though no large orders have been placed. Railroads are buying only for repair work, as are fabricators of structural steel. Demand for wire products has sustained another setback because of rains. Warehouse business for April was reported to be about equal to March, but about 10 per cent ahead of last April.

Pig iron sales and shipments have been light during the last two weeks, following a heavy rush movement prior to the increase in freight rates. The melt, however, is being well maintained in the agricultural implement, stove and washing machine industries, the latter showing increased activity.

The scrap iron market is weak. and little interest is being shown by either melters or dealers. Prices are nominally unchanged. A Missouri Pacific list of approximately 100 carloads will be closed this week

# Output Sustained In South

BIRMINGHAM, May 7. — Steel production in the South is still unchanged. The Tennessee Coal, Iron & Railroad Co. is operating nine open-hearth furnaces and the Gulf States Steel Co., three, making a total of 12 for the district. Production schedules call for the same rate of operations for the next two or three weeks, with the industry awaiting developments before planning third quarter operations.

During the past week, the rail backlog of the Tennessee Coal, Iron & Railroad Co. was increased by an allotment from the Missouri Pacific of 6500 tons of rails and track accessories to be delivered during this quarter.

Pig iron production is at an unchanged rate with nine furnaces still in blast, of which four are producing merchant iron. The Woodward Iron Co. has one furnace in blast, the Sloss-Sheffield Steel & Iron Co., one, and the Republic Steel Corpn., two.

Cast iron pressure pipe business still is being received in small-lot orders, but aggregate bookings have been sufficient to keep foundry production in line with other activities of the district.

Throughout the South, operators in the heavy industries expect the present production rate to continue through this quarter, and are looking to the works relief program to take up any slack that may develop in the third quarter.

# Coast Pipe Company Reported Purchased

San Francisco, May 7.—A report that Western Pipe & Steel Co. of California, of this city, is to become a subsidiary of the United States Steel Corpn. is as yet unconfirmed by the Western Pipe company or the Columbia Steel Co., Coast steel producing subsidiary of the Steel Corporation.

# Chicago Iron and Steel Market

(CONTINUED FROM PAGE 69)

ules for June and July. Announcements of fall fence terms are expected any day.

# Scrap

A local mill has taken about 5000 tons of heavy melting steel at \$10.25 a gross ton delivered. This transaction, representing a 25c. advance, comes at a time when both dealers and brokers have lost part of their enthusiasm for higher prices and have broken down quotations to railroads. Dealers can now buy heavy melting steel freely at \$10 and successful bids for railroad steel are lower than a week ago. Malleable and low phosphorus grades are moving steadily, while cast grades are slow though better than at the turn of the month.

# Warehouse Men Elect Chapter Officers

EORGE R. BEASOM, manager, Scully Steel Products Co. at Boston has been elected president of the New England chapter of the American Steel Warehouse Association, Inc., to serve for the coming year. First vice-president is Herbert C. Wills, Boston manager, Joseph T. Ryerson & Son, Inc.; second vice-president, Carroll S. Harvey, Arthur C. Harvey Co., Allston, Mass.; and the secretary-treasurer, Quincy W. Wales, Brown-Wales Co., Boston.

Clarence C. Dodge, George F. Blake, Inc., Worcester, Mass., and Richmond Lewis, Charles C. Lewis Co., Springfield, Mass., were named to serve on the board of directors of the national organization.

Committee chairmen for the coming year are:

Cold-finished steel - J. L. Parsons,

Edgar T. Ward's Sons Co.
Alloy steel—A. Oram Fulton,
Wheelock, Lovejoy & Co., Inc.

Tool steel-Lester W. Hawkridge, Hawkridge Brothers.

Sheet steel - Chapin E. Harris, Brown-Wales Co.

Stainless steel-H. C. Wills, Joseph T. Ryerson & Son, Inc.

Tubular goods — Arthur Hastings, Austin-Hastings Co. Hot-rolled steel - C. S. Harvey,

Arthur C. Harvey Co.

Membership — Chapin E. Harris,

Brown-Wales Co.



# Railroad Equipment

Tientsin-Pukow is inquiring for 16 locomotives of 2-8-2 or 2-8-4 type. Wei Ch'iu is chief commissioner at Tientsin, China.

Belt Railway of Chicago has ordered two Diesel-electric locomotives from American Locomotive Co.

Norfolk Southern is considering purchase of 500 box cars.

Board of Transportation, New York, is asking bids until May 28 on 500 steel passenger cars and 20 extra trucks for subway operation.

## RAILS

Akron, Canton & Youngstown has placed 7600 tons of rails with Carnegie Steel Co.

Erie has placed 16,880 tons of rails, 9900 tons going to Carnegie Steel Co., 3280 tons to Illinois Steel Co., 2600 tons to Bethlehem Steel Co., and 1100 tons to Inland Steel Co.

# Cast Iron Pipe

Jacksonville, Ore., closes bids May 23 for about 9830 ft. of 6 and 8-in. for water system; also for fittings, specials, valves, etc. D. T. McDonough, City Hall, Medford, Ore., is consulting engineer.

San Diego, Tex., plans water pipe lines: also new pumping plant and other waterworks equipment. Fund of \$80,000 is being arranged through Federal aid. Garrett Engineering Co., 300 Hughes Street, Houston, Tex., is consulting engineer.

New Braunfels Gulf Water Supply Corpn., New Braunfels, Tex., plans main trunk line for fresh water supply from New Braunfels to Corpus Christi, Tex., and vicinity. Part of route will comprise aqueduct construction. Project will include central reservoir and other facilities. Fund of \$8,000,000 will be arranged through PWA.

Artesian Gardens, Tex. (San Antonio P. O.), closes bids May 13 for 16,000 ft.

of 6-in., 7200 ft. of 2-in. and 80 ft. of 8-in. for water supply; also for small section of galvanized steel pipe, five tons of cast iron specials, valves, fittings, etc. Terrell-Bartlett, Inc., Smith-Young Tower, San Antonio, is consulting engineer.

New Haven, Ky., plans water pipe lines. Fund of \$32,000 has been secured through Federal aid for this and other waterworks construction.

Milwaukee closes May 9 on 1254 tons of 16, 20 and 24-in., and 100 tons of miscellaneous class C water pipe.

Fox Point (Milwaukee P. O.), has advanced from May 9 to May 17 date of opening bids on 765 tons 16-in, for connecting main to Milwaukee; alternate bids being taken on class C and class 250 centrifugal material.

Bunker Hill, Ill., plans water pipe lines; also other waterworks construction. Fund of \$92,000 has been secured through Federal aid.

Oak Grove, Mo., plans 16-in. and smaller for water system; also elevated tank and tower, and other waterworks construction. Fund of \$51,000 has been arranged through Federal aid. Black & Veatch, 4706 Broadway, Kansas City, Mo., are consulting engineers.

Stanley, Va., plans pipe lines for water system; also other waterworks installation. Fund of \$23,000 has been arranged. J. B. McCrary Co., Atlanta, Ga., is consulting engineer.

Niagara Falls, N. Y., plans fund of \$800,000, with financing through PWA for extensions and improvements in water pipe lines, including storm and sanitary sewer system.

Carrollton, Ala., plans pipe lines for water system. Fund of \$27,000 has been arranged for this and other waterworks installation.

Apalachin, N. Y., plans water pipe lines; also other waterworks construction. Fund of \$45,000 has been secured through Federal aid. H. R. Starbird, First Trust and Deposit Building, Syracuse, N. Y., is consulting engineer.

Walnut Park Mutual Water Co., Walnut Park, Cal., has placed 100 tons of 4 and 10-in. with American Cast Iron Pipe Co. Oakland, Cal., has taken bids on 552 tons for which United States Pipe & Foundry Co. is low bidder.

Inglewood, Cal., took bids May 6 for 157 to 179 tons of 4 to 8-in.

Bainville, Mont., has opened bids on 145 tons of 4 to 8-in.

East Bay Municipal Utility District, Oakland, Cal., opened bids May 8 on 2913 cast iron fittings.

Olympic, Wash., opened bids May 8 on 500 tons of 4 to 12-in.

Spokane, Wash., rejected bids on 140 tons of 12-in. and will take new bids

# Pipe Lines

North Central Gas Co., Bridgeport, Neb., plans welded steel pipe line from Glendo, Wyo., to Bridgeport and vicinity, about 160 miles, for natural gas supply. Right-of-way is being secured. Cost over \$1,000,000.

Shiatook, Okla., will soon take bids for about 12 miles of 8-in. for new gravity water flow line from Mohawk pumping station, Tulsa, Okla., to municipal limits. Bond issue of \$93,000 has been authorized, including service lines, meters, etc. Victor H. Cochrane, Wright Building. Tulsa, is consulting engineer.

United States Engineer Office, Memphis, Tenn., asks bids until May 13 for 45 sections, each 52 ft. long, of 32-in. steel pontoon pipe; 12 sections, totaling about 293 ft., 32-in., and 125 sections, 32-in., each 13 ft. 2 in. long, steel shore pipe (Circular 350 F).

Consumers Power Co., Jackson, Mich., has closed contract for purchase of natural gas from Petroleum Transportation Co., recently organized, operating in Mecosta-Montcalm counties gas fields, and will be active in construction of new welded steel pipe line of Michigan Exploration Co., Mount Pleasant and Muskegon, Mich., lately referred to in these columns. Line will be 30 miles long, extending to vicinity of Flint, Mich. Cost about \$200,000.

Quartermaster, Marine Corps, Washington, asks bids until May 15 for welded steel pipe (Schedule 661).

Lyons, Kan., will soon take bids for steel pipe for municipal gas distribution system. Bond issue of \$75,000 has been arranged for this and distributing station. F. E. Devlin, Wheeler-Kelly-Hagny Building, Wichita, Kan., is consulting engineer.

Corcoran, Lindsay, Porterville and Tulare, Cal., will vote May 10 on formation of Central Counties Municipal Utility District. If formed district will construct approximately a 75 mile 6 and 8-in. gas pipe line. Cost about \$377,000.

# National and Inland Report Large Profits

THE National Steel Corpn., Pittsburgh, in the March quarter, had net profit of \$3,367,632, equivalent to \$1.56 a share on common stock outstanding. This compares with \$1,642,328, or 76c. a share in the corresponding 1935 quarter.

The Inland Steel Co., Chicago, earned \$2,465,796, after all charges, in the first quarter of 1935, compared with \$1,104,537 in the March quarter of 1934. Directors increased the quarterly dividend from 25c. a share to 50c.

# Morgan Engineering Co. Has Increased Orders

ORGAN ENGINEERING CO., Alliance, Ohio, in its annual report, stated that orders received during the first four months of 1935 were in greater volume than in the entire year of 1934. President A. F. Morris in his statement said: "We feel justified in holding an optimistic view for the first time in four years. Tangible evidence is present that our business is definitely on the way out of the depression."

The company lost \$248,154 during the year after charging off depreciation, bond interest, etc., which was considerably less than during each of the two previous years. The bonded indebtedness was reduced \$100,000.

# OBITUARY

C. A. PAESCHKE, whose death was mentioned in last week's issue, was a member of the American Iron and Steel Institute and the American Institute of Mining and Metallurgical Engineers. He had been president of the Geuder, Paeschke & Frey Co., Milwaukee, since 1903. His son, Charles W. Paeschke, is vice-president and secretary.



C. A. PAESCHKE

W. J. OLCOTT, who for many years was president of the Oliver Mining Co., the ore subsidiary of the United States Steel Corpn., died April 29, at Pasadena, Cal. He was 73 years old.

OSCAR M. LEICH, pioneer in manufacturing equipment for in-



# WYCKOFF

# COLD DRAWN STEELS

Scientifically solves steel problems involving uniformity of product, depth of hardening, toughness and surface hardness of penetration . . . enables us to duplicate the latest and most efficient grade of cold drawn steel for your purpose, time after time with laboratory precision . . . assuring a decided savings in your manufacturing costs.

Investigate the unusual advantages of WYCKOFF Controlled Cold Drawn Steels today—our metallurgists will be glad to analyze your particular requirements and recommend the correct steel for your purpose.

# WYCKOFF DRAWN STEEL COMPANY

General Offices: First National Bank Building, Pittsburgh, Pa. Mills at Ambridge, Pa. and Chicago, III.

Manufacturers of Cold Drawn Steels

Turned and Polished Shafting

Turned and Ground Shafting

dependent telephone companies, died April 29, at Genoa, Ill., at the age of 59 years. He was a graduate of the University of Wisconsin.

FRANK D. GRUNDER, manager of sales, tubing department, Jones & Laughlin Steel Corpn., Pittsburgh, died on April 30, aged 63 years. Early in his career he was with the American Tube & Iron Co., which later became a part of National Tube Co., with which concern he remained until he joined

Jones & Laughlin company in 1916, as manager of sales in the tube department. He was a member of the American Petroleum Institute and American Gas Association.

GUY E. TARBERT, purchasing agent for the Anchor Post Fence Co., Baltimore, Md., died of pneumonia on April 23. He joined the Anchor Post Fence Co. in 1928 when the purchasing department was transferred to the Baltimore plant

# OUR NEWARK OFFICE AND WAREHOUSE

recently opened at 332 Frelinghuysen Avenue, telephone Bigelow 8-1592, is now stocked with our various grades of HY-TEN and SPECIAL ALLOY STEELS.

# WHEELOCK, LOVEJOY & COMPANY, INC.

CAMBRIDGE

CHICAGO

CLEVELAND

DETROIT

NEWARK

# PERSONALS

H. H. Wood, until recently manager of the rolling mill division of the Timken Roller Bearing Co., has been placed in charge of the newlyopened Pittsburgh office of the Morgan Construction Co., at 1602 Koppers Building. Mr. Wood received a degree in mechanical engineering from Cornell University in 1912, after which he was engaged for several years in public utility work in the Middle West. From 1918 to 1925 he was identified with the Western Cartridge Co. He became chief engineer of the Laclede Steel Co. in 1925 and four years later resigned to join the sales department of the Timken Roller Bearing Co. He was made manager of the rolling mill division of the company in 1934.

HOMER C. BUTTS, formerly vicepresident of the Newton Steel Co., where he served successively as metallurgist, assistant vice-president in charge of operations, and then vice-president, has been appointed assistant to the president of the Sharon Steel Hoop Co., Sharon, Pa. Prior to his association with the Newton company, he was engaged in development work with the General Motors Research Corpn., Dayton, Ohio.

\* \* \*

CARL O. HEDNER, manager of sales of chain hoists and allied overhead hoisting and conveying equipment of the Yale & Towne Mfg. Co., Philadelphia division, has been elected chairman of the Electric Hoist Manufacturers Association. He has been identified with the Yale & Towne organization since 1923.

. . .

WILLIAM FREDERICK DURAND, professor emeritus of mechanical engineering at Stanford University, and a past-president of the

American Society of Mechanical Engineers, has been awarded the Daniel Guggenheim medal for 1935, "for notable achievement as pioneer in laboratory research and theory of aeronautics; distinguished contributions to the theory and development of aircraft propellers." Doctor Durand was one of the first to engage in scientific research in aeronautics on his own initiative.

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MYRON H. BLANCHARD, formerly engaged in metallurgical and sales work, has been placed in charge of the publicity and advertising activities of the Quigley Co., New York. A. L. DIEDERICH will assist the manager of the fire brick and insulating brick department.

. . .

MYRON A. COLER has been awarded the seventh Weston Fellowship will carry out his research at Columbia University on electrophoresis.

HOWARD L. RICH has been elected president of the Lynd-Farquhar Co., Boston. HAROLD F. FURBER has been made secretary-treasurer.

. . .

John Chipman, recipient of the Howe medal of the American Society for Metals in 1934, has joined the research staff of the American Rolling Mill Co. as associate director of research laboratories. He will be responsible for research activities in the field of melting and refining metals. For six years he was research engineer in the department of engineering research at the University of Michigan. He was graduated from Sewanee in 1920 and received his Ph.D. at the University of California in 1926.

R. G. HARRY has been appointed New York district sales manager,



H. H. WOOD



H. C. BUTTS



C. O. HENDER

with office at 90 West Street, of the Wrought Iron Co., Lebanon,

4 4

W. M. SMITH, formerly sales manager of the furnace department of the Carborundum Co., has been appointed to manage engineering and sales activities in the New 1012 Philadelphia. New York area for the Selas Co.,

J. E. HOLVECK has been made special sales engineer for the Worthington Pump & Machinery Corpn., Harrison, N. J., operating from the Pittsburgh, Cleveland, Detroit, Chicago and Buffalo offices of the company.

. . .

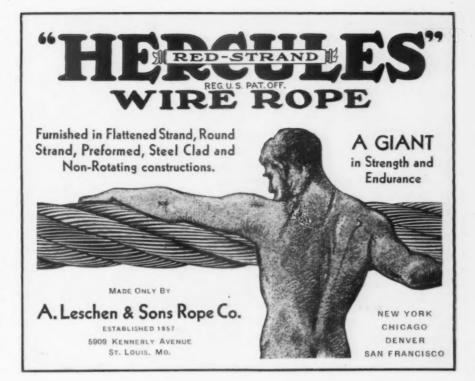
J. T. GILLICK, vice-president of the Milwaukee Road, has announced that C. F. LOWETH has been retired at his own request as chief engineer of the system, and is succeeded by WILLIAM H. PEN-FIELD, formerly engineer of maintenance of way. Mr. Loweth remains as consulting engineer.



STEPHEN F. BRIGGS, co-founder and president of the Briggs & Stratton Corpn., Milwaukee, manufacturer of automobile devices and accessories, has been elected chairman of the board, a new office, and is succeeded by CHARLES L. COUGHLIN, formerly vice-president.

. . .

F. W. THOMAS, for the last 10 years New York district manager of the coupling division of the Bartlett Hayward Co., has joined the staff of the John Waldron Corpn., New Brunswick, N. J., as general manager of sales of the Francke coupling and silent gear departments.



HARRY O. LANG has been appointed vice-president and general manager of sales at Detroit for the Heppenstall Co., Pittsburgh. He had previously been connected with the Crucible Steel Co. at Detroit, Remington Arms Co., Bridge-port, Conn., and Billings & Spencer Co., Hartford. His headquar-ters will be at the main office and warehouse of the Heppenstall Co., in Detroit.

WILLIAM E. MCFEE, of the American Rolling Mill Co., Middletown, Ohio, will address the Ad-

vertising Affiliation Convention in Pittsburgh on May 11. His subject is, "Telling and Selling with Geared-Up Industrial Copy."

4 4 4

CARL C. Wood has been named general superintendent of the gray iron foundry of the Chevrolet Motor Co. at Saginaw, Mich., succeeding the late JOHN R. DUNHAM. Mr. Wood has been with the Saginaw foundry division since 1920, serving as foreman of the pattern shop and then as chief inspector. A year ago he became day production superintendent.











New officers of the Keystone Steel & Wire Co., Peoria, Ill. (Left to right). W. H. Sommer, president; R. E. Sommer, vice-president and general manager; D. P. Sommer, vice-president and general superintendent; Henry G. Sommer, executive vice-president and treasurer; and C. W. LaPorte, vice-president. Announcement of the changes was made in these columns last week.



# Activities Bearing on Machine Tools Distribution

A Department Conducted by L. M. Waite

#### Associated Machine Tool Dealers

AT a meeting of the executive committee held in Cleveland, April 23, Harry Barney, Barney Machinery Co., Pittsburgh, was appointed secretary of the Associated Machine Tool Dealers, to succeed the late J. R. Vandyck.

Final arrangements have been made for a large space to be used as headquarters for the Associated Machine Tool Dealers at the Sept. 11-21 exposition of the Machine Tool Builders Association, in Cleveland. Ample provision in prominent location for the convenience of visitors, and for active

dealer cooperation in various convention activities, is included in the space contract.

#### Orders

N the Metropolitan area a manufacturer of printing equipment has divided orders for some 15 standard machine tools among dealers and direct representatives. A manufacturer of canning equipment likewise distributed orders for eight standard machines, two of which were rebuilt.

The Watson - Stillman Co., Roselle, N. J., reports a pleasing increase in orders. This company too has joined the buying fraternity by ordering a few tools for its own shop.

A mid-western manufacturer of grinding machines is reported as busy on orders for machines to be used in mid-western shops manufacturing automobiles and automobile accessories. Very little of the business has been secured from points east of Cleveland. A considerable portion involves either special equipment on standard machines or special machines designed for individual jobs.

A prominent manufacturer of multiple spindle screw machines reports a rapid dwindling stock of machines. The present stock is about one-tenth of what it should be. Orders are said to be coming in at a rate which exhausts shop orders, even though schedules have been increased since the first of the year.

#### Areas

MID-WESTERN manufacturer of standard production machinery advises of a very satisfactory order condition during the past six months with 1935 orders far ahead of 1934. Conditions reported as follows:

New England, good with few orders for single machines, in most cases four or five machines of a type divided over the company range of capacities. Pennsylvania, spotty, mostly single orders. New York State, spotty but with inquiries good. Metropolitan area, fair. Sales tax partially detrimental. South, fair as compared with normal demand. Pacific coast, poor. Midwest, a good business including shops outside of the automobile industry.

The maker of a leading line of machines ranging in brackets of the higher priced production equipment reports on area sales as follows: New England, very few orders for heavy machine tools. The lighter lines of standard shop machines, good.

Midwest, including Detroit and Chicago areas, fair and far ahead of 1934 with little from automotive industry since first of year.

West and Southern, not large orders, but, compared with 1934, very good.

Foreign orders, good under conditions of retarded favorable trends; retarded because of uncertainties of government finance and tariff plans. The glass industry a good customer. Second-hand equipment on heavy machines a strong competition. This fact attested not only by sales reports but by orders and inquiries for repair parts for

machines ranging from 20 to 35 years old.

#### Detroit Area Dealers Educate Trade School Teachers

NE of the recent interesting and constructive activities of the Detroit Area Associated Machine Tool Distributors has been cooperation with the Michigan Industrial Education Society in a convention and exhibit at Dearborn, Mich. The Association took two booths and space in the exhibit hall. Its membership rotated attendance in a way which assured that at all times at least two members would be at the booths to talk to and with those making up the total of several hundred teachers who attended from all parts of the State. The talks and demonstrations pertained to lines handled by the Detroit Area Group. It was aimed to so present the advantages of modern machine tools that the three-day effort would result in the introduction of the best types of machines and equipment into Trade Schools of the State rather than questionable or special equipment such as Boards of Education have compelled teachers to buy in the past, using price as a main consideration.

#### Railroads

THE Chicago, Milwaukee, St. Paul & Pacific Railroad Co. is soon to place on regular 6½-hr. schedule runs two new streamlined engines for the Hiawatha train service between Chicago and the Twin Cities, Minneapolis and St. Paul. The run will be competitive with similar runs on other roads as referred to below. These engines represent the first streamlined, high-speed, steam locomotives to be built in the United States. They are entirely new, being built from the ground up by the American Locomotive Works.

The Chicago & Northwestern Railroad Co. will compete with two No. 400 trains which have been rebuilt in their own shops. These are steam operated.

The Chicago, Burlington & Quincy Railroad Co. will operate a pair of Zephyrs—"Twin Zephyers," built by the Edward G. Budd Mfg. Co., Philadelphia. These are Diesel powered.

This service competition presents two pairs of steam powered trains and one pair of Diesel-Electric trains.

The American Car & Foundry Co. is soon to deliver one of the Baltimore & Ohio Railroad Co. new streamlined trains.

The Berwick, Pa., plant of the American Car & Foundry Co. is

## HAVE YOU A CLUTCH PROBLEM?

—One where synchronization, remote control, operating safety and dependability are demanded?

There isn't any better solution than a Dings Magnetic Clutch.

Dings Magnetic Clutches will answer your demands for strength, quick action and long life.

There is a size for every problem. Let us tell you what we can do.



DINGS MAGNETIC SEPARATOR CO. 727 Smith St., Milwaukee, Wisc.

Since 1899 Dings engineers have been building magnetic equipment. Here is experience that no other manufacturer of this type of equipment can offer. Such experience has a real dollars and cents value to you.

building two new streamlined trains for the Gulf, Mobile & Northern Railroad. These are about ready for delivery.

The Pullman Co. is building a pair of Diesel-Electric trains for the Illinois Central Railroad.

It is reported that the Edward G. Budd Mfg. Co. is considering the building of Zephyr type trains for lease to railroads.

#### Exports

MEHLICH, general director, with Factory Manager Schröder, both executives of a large Berlin, Germany, gear manufacturing company, have arrived in New York. Their trip is in relation to arrangements covering a possible purchase of a considerable list of American machine tools for use in the Berlin plant.

Japanese buyers have been looking over second hand equipment in different areas in company with dealers who specialize along lines of such equipment. Transactions are reported as being on a cash basis.

#### Sailed

B. UPDEGRAFF, vice-president and engineer, Watson-Stillman Co., Roselle, N. J., sailed on the Empress of Australia, April 24, for England. Mr. Updegraff will visit a number of Continental points prior to his return.

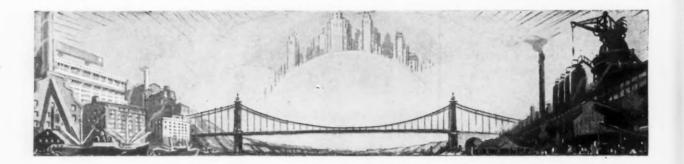
E. R. Motch, Sr., Cleveland, president of the Motch & Merryweather Co., machine tool dealers with offices in Cleveland, Cincinnati, Detroit, and Pittsburgh, sailed on the Aquitania, April 26, for England.

John Flynn, president Peninsular Machinery Co., Detroit, sailed May 4 for a visit to his home in Ireland. Mr. Flynn's last visit was in 1930. He expects to be gone until July. The trip is not concerned with the investigation of machine tools or foreign exhibits.

C. WAGNER, formerly with the Baldwin-Southwark Co., at the De Laverne plant, has joined the sales force of the Vandyck Churchill Co. Mr. Wagner will be associated with the company's Philadelphia office.

Albert F. Nathan, patent attorney, long known among many of the larger machine tool manufacturers, has moved his offices from New York City to Plainfield, N. J., where he is located in the Professional Building.

Homer C. Bayliss, The Motch & Merryweather Machinery Co., Detroit Office, was general chairman for Michigan in the elaborate Detroit observance of Army Day, April 6. The observance was planned by the Michigan Committee and the Council of National Defense of the Detroit Board of Commerce. Mr. Bayliss is also Secretary of the Detroit Group, Associated Machine Tool Dealers.



# Plant Expansion and Equipment Buying

## Labor Troubles Depress Machine Tool Market — New Inquiry Deferred

STRIKES in the automobile industry seem to have had a depressing effect upon the machinery market, even though automotive buyers have not recently been active. While the tie-up in the Toledo, Ohio, transmission plant of the Chevrolet Motors Co. resulted in the placing of some equipment orders for other plants of this company and its parent organization, the sentimental effect upon the machinery market as a whole has been bad.

The Electro-motive Corpn. has postponed for several weeks the issuing of inquiries for tools for its new Chicago plant. Industrial buying is otherwise rather dormant, although the plans of the steel industry are being watched with interest in the trade and heavy machine tool purchases are expected before the end of the year.

#### ♦ NORTH ATLANTIC ▶

Joseph E. Seagram & Sons, Inc., 405
Lexington Avenue, New York, distiller,
plans addition to plant of Calvert-Maryland Distilling Co., Inc., Relay, Baltimore,
a subsidiary. Expansion will include a
complete new operating unit. Cost over
\$1,000,000 with equipment. Edward M.
Fleischmann is president of Calvert-Maryland company, which will operate new
plant.

H. J. Heinz Co., 1062 Progress Street, Pittsburgh, manufacturer of food products, has leased new two-story building, about 54,000 sq. ft. floor space, to be erected at Long Island City, for new central factory branch, storage and distributing plant. Cost over \$80,000 with equipment. John M. Baker, 10-09 Jackson Avenue, Long Island City, is architect.

Allegheny Metal Products Corpn., Brooklyn, has been organized by Marcus Nahman, 190 Hewes Street, and associates, to manufacture metal goods.

Continental Can Co., 1 Pershing Square, New York, has let general contract to Austin Co., Cleveland, for new plant at Elwood, Ind., consisting of two main onestory units, 273 x 400 ft., and 63 x 223 ft. Cost close to \$400,000 with machinery. Battey & Kipp, Inc., 231 South LaSalle Street, Chicago, is consulting engineer.

Board of Education, Hudson, N. Y., has secured fund of \$487,500, through Federal aid, for new multi-story high school to include manual training department. Bids will be asked soon on general contract. Tooker & Marsh, 101 Park Avenue, New York, are architects.

Bureau of Supplies and Accounts, Navy Department, Washington, asks bids until May 14 for 136 oxy-acetylene welding torches (Schedule 4950), 2000 oxygen cylinders and 1000 closing valves (Schedule 4973), for Brooklyn Navy Yard; 5960 galvanized screw anchor shackles and 2100 wire rope thimbles (Schedule 4956), 476 pairs sailmakers' shears and 324 pairs tinners' shears (Schedule 4949), for Brooklyn, Mare Island and Puget Sound yards; 15 sets worm wheels and worms (Schedule 4972), for Brooklyn and Philadelphia yards; 944 hand drills (Schedule 4948), hacksaw blades (Schedule 4952), for Brooklyn and Mare Island yards; sockets (Schedule 4983), for Brooklyn, Philadelphia, Washington and other yards; 4720 multiple folding rules (Schedule 4945), for Brooklyn, San Diego and Puget Sound yards; six or eight motor-driven plate scarfing and plate edge planers (Schedule 4985), for Brooklyn, Philadelphia and Charleston yards; until May 17, 5312 ship scrapers (Schedule 4991), for Brooklyn and Puget Sound yards; 25 portable oxy-acetylene cutting and welding outfits (Schedule 5047), for Brooklyn and Boligo yards.

General Aniline Works, Inc., 1150 Broadway, New York, has let general contract to White Construction Co., 95 Madison Avenue, for five-story addition, 30 x 82 ft., to plant at Rensselaer, N. Y. Cost about \$85,000 with equipment.

Signal Supply Officer, Army Base, Brooklyn, asks bids until May 27 for 46,000 ft. of submarine telephone cable and seven reels (Circular 124).

New York Revolving Portable Elevator Co., 326-50 Garfield Avenue, Jersey City, N. J., manufacturer of industrial elevators, parts, etc., has let general contract to Bonanno Brothers, North Bergen, N. J., for new one-story plant, 60 x 165 ft., at North Bergen, where site was recently acquired. Company has sold present property and will remove to new location as soon as building is ready, increasing present capacity.

De Mattia Machine & Tool Co., Clifton, N. J., has been organized by Gregory A. De Mattia, Clifton, and associates, capital \$100,000, to manufacture machinery, tools, parts, etc. New company will take over De Mattia Machinery & Tool Works, with local plant on Wellington Street.

Bureau of Supplies and Accounts, Navy Department, Washington, asks bids until May 14 for one motor-driven thread miller (Schedule 4988), one 6600-lb, high platform truck (Schedule 4981), one involute profile measuring machine (Schedule 4990), one normal pitch and space measuring machine (Schedule 4994), one motor-driven internal grinder with automatic sizing (Schedule 4995), one motor-driven indicating dial internal grinder (Schedule 4996), one motor-driven indicating dial internal grinder (Schedule 4996), one motor-driven and hydraulic diamond boring machine (Schedule 4993), for Philadelphia Navy Yard.

Penn Auto Body Co., 711 South Sixth Street, Philadelphia, has leased group of buildings at 609-21 Christian Street, which will be remodeled for new plant.

#### ◀ NEW ENGLAND ▶

Merrimac Chemical Co., Everett, Mass., has let general contract to William M. Bailey Co., 88 Broad Street, Boston, for one story addition, 60 x 75 ft. Steel tanks and other equipment will be installed. Cost about \$45,000 with equipment.

Bureau of Supplies and Accounts, Navy Department, Washington, asks bids until May 21 for 16 steam throttle alloy steed valve casings (Schedule 5008), for Boston Navy Yard. Appropriation is being arranged through PWA for new structural dock at yard, with installation of heavy-duty machinery and mechanical-handling equipment.

Master Crafts, Inc., Hartford, Conn., has been organized by William A. Reiner, 49 Pearl Street, Hartford, and Alan Reuben, West Hartford, to manufacture metal products.

Union Coal Co., 470 Dwight Street, Holyoke, Mass., plans new bulk oil storage and distributing plant, including pumping station, steel tanks, etc. Cost about \$30,000 with equipment.

Commanding Officer, Springfield Armory. Springfield, Mass., asks bids until May 13 for broaching equipment (Circular 116).

86-THE IRON AGE, May 9, 1935

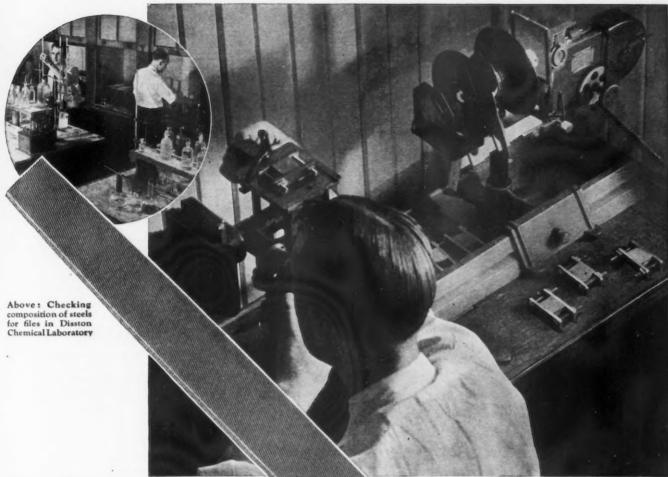
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file.

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# Laboratory CONTROL

The careful selection of proper raw materials that entered into the making of files and rasps was of paramount importance to the Disston organization as a producer and to you as a file user. Disston with its record of 79 years as makers of fine steels brought a wealth of experience into play in making these decisions.

Constant checking and rechecking of steel for chemical and physical properties are carried on daily under the supervision of trained technicians to insure the standards of quality set up.

Disston Research pre-determines the character of Disston Files. Laboratories, routine process inspections and scientific testing machines check the resultant quality in the finished file. Hour-by-hour, day-by-day use in the Disston saw works and machine shops is the final test. Disston Files are good files!

WRITE for Disston Metal-Cutting Manuals: "Files", "Hack Saws", "Circular Saws", "Band Saws", "Carboloy Products". Free!

Photographing structure of file steels at magnifications of 1,000 diameters, in Disston Physical Laboratory.

Determining heat treatment and hardenability of steels for files in Disston Experimental Laboratory.

MILL FILE.—For filing hardened and tempered steel, sharpening edge tools, lathe work, draw filing and smooth finishing work. Thousands used in filing Disston Cross-cut and Circular Saws.

HENRY DISSTON & SONS, INC., 519 TACONY, PHILADELPHIA, U.S.A.

Branches: Bangor, Me., Boston, Chicago, Detroit, Memphis, New Orleans, Seattle, Portland, Ore., San Francisco, Vancouver, B.C.

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# DISSION





O doctor's prescription could be compounded more carefully or accurately than is the steel from which ASCO Special High Grade Forging Billets and Slabs are made.

And just as there is no "universal" prescription that will answer every human need, so thousands of ASCO formulas are required to meet the countless demands of industry for special steels for special purposes.

The Andrews Metallurgical Laboratories have developed special formulas to meet your individual requirements, and are at your service in solving your forging problems.

Use this service freely. It is yours without obligation.

FORGING

THE ANDREWS STEEL CO., NEWPORT, KENTUCKY

Carbon, Chrome, Chrome Molybdenum, Chrome Nickel, Chrome Vanadium, Molybdenum, Nickel, Nickel Molybdenum, Vanadium Billets and Slabs.

Granite State Abattoir, 163 Hancock Street, Manchester, N. H., has let general contract to Innamorati Brothers, 135 Clark Street, Clinton, Mass., for remodeling former brewery on Hancock Street for new abattoir and meat-packing plant, Cost over \$40,000 with equipment.

Hesse Machine & Mfg. Co., Inc., Boston, has been organized by Solomon Wakstein, 40 Crawford Street, Roxbury, Mass., and associates, to manufacture machinery and other mechanical equipment.

#### OHIO AND INDIANA

Western Automatic Machine Screw Co., Engineers Building, Cleveland, has low bid from Sam W. Emerson Co., 1836 Euclid Avenue, for one-story addition to plant at Elyria, Ohio, 190 x 209 ft. Cost over \$100,000 with equipment. John L. Fischer is company architect. B. C. Franklin is general manager at Elyria.

United States Engineer Office, Zanesville, Ohio, asks bids until May 22 for two vertical triplex oil pumps and accessories for Dover dam (Circular 93); until May 24, for new dam at Leesville, Ohio, including crane, trolley and chain hoist, light and power system, metal pipe, gates and accessories (Circular 95).

Sterling China Co., Wellsville, Ohio, soon takes bids on general contract for new additions to plant. A new tunnel kiln unit will be built. Cost over \$150,000 with equipment.

Andrew Jergens Co., 2535 Spring Grove Avenue, Cincinnati, manufacturer of soaps, etc., has let general contract to Parkway Construction Co., Keith Building, for one-story top addition to factory No. 7, 96 x 120 ft. Cost about \$40,000 with equipment. Tietig & Lee, 34 West Sixth Street, are architects. Company has also awarded contract to James G. Henry & Son, Glendale, Cal., for two-story and basement addition, 46 x 100 ft., to branch plant at Burbank, Cal., for storage, distribution and other service. Cost about \$30,000 with equipment.

Material Division, Air Corps, Wright Field, Davton, Ohio, asks bids until May 13 for ball bearings (Circular 708), 1000 cockpit lamp assemblies (Circular 711), four engine units (Circular 711); until May 14, target windlass gear and housing assemblies, windlass housing, two external gear and housing assemblies, windlass housing, two external gear and housing assemblies, cable pulley support assemblies, and cable stop assemblies, all for tow targets (Circular 710); until May 15 for 10 to 20 dead reckoning type computers (Circular 707); until May 20 for 30 solenoid assemblies, 25 gun camera solenoids and 25 gun type solenoid assemblies (Circular 696); until May 22 for 66 fixed gun sight assemblies (Circular 703).

Decatur Packing Co., Greenwood, Ind., manufacturer of food products, has plans for new one and two-story plant. Cost about \$30,000 with equipment.

#### **■ SOUTH ATLANTIC**

Board of Greenwood County Commissioners, Greenwood, S. C., E. L. Brooks, chairman, asks bids until May 27 for power dam, power house and other structures for new hydroelectric generating plant on Saluda River, near Buzzard's Roost, including four steel tainter gates, complete with hoists; six penstock head gates with individual hoists, 40-ton crane, intake racks and other equipment. Fund of \$2,627,000 has been arranged through Federal aid. Daniel T. Duncan, Greenwood, is consulting engineer.

City Council, Panama City, Fla., plans new municipal dock and warehouse units, with elevating, conveying, loading and other mechanical-handling equipment; also new municipal cotton compress, with presses and other machinery. Fund of \$550,000 is being arranged through Federal aid.

Lance Packing Co., Dilworth district, Charlotte, N. C., food packer, has plans for three-story addition. Cost over \$35,000 with equipment.

#### ■ WASHINGTON DIST. ▶

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Board of District Commissioners, District Building, Washington, asks bids until May 17 for four sheet metal tables, two machine tables, 25 manual training benches, one woodworking bench, 52 mechanical drawing tables, eight jewelers; benches, cabinets, etc., for Woodrow Wilson High School; until May 21, pulleys, weights, crucibles, calipers and other equipment for public schools.

Baltimore Pure Rye Distilling Co., Sollers Point Road, Baltimore, has let general contract to Engineering Contracting Corpn., 504½ St. Paul Street, for six-story addition, 120 x 163 ft., primarily for storage and distribution. Cost about \$100,000 with equipment. C. H. Osborne, 222 West Franklin Street, is consulting engineer.

Quartermaster, Marine Corps, Washington, asks bids until May 15 for weldless chain, brass pipe, siphon valves, pipe fittings, bushings, sink plugs, traps, wrought iron pipe, etc. (Schedule 661); until May 16, one pedestal type, motor-driven rip and cross-cut saw table, with 6-in. jointer (Schedule 666).

Crown Cork & Seal Co., Eastern Avenue and Kresson Street, Highlandtown, Baltimore, has let general contract to Consolidated Engineering Co., 20 East Franklin Street, for four-story addition, 60 x 125 ft. Cost about \$75,000 with equipment. Lucius R. White, Jr., 10 West Chase Street, is architect.

Bureau of Supplies and Accounts, Navy Department, Washington, asks bids until May 14 for one main drive planer control equipment (Schedule 5031), 23 sets preci-

88-THE IRON AGE, May 9, 1935

With this new Bristol's Electric Indicating
Thermometer centrally located at headquarters

TEMPERATURES
at as many distant
places as you like!

EASY TO READ
even at a distance

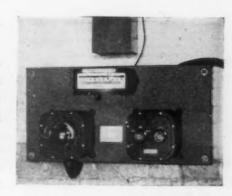
Reproduction to exact size of the extra wide scale in Bristol's Electric Indicating Thermometer

If in the old days you wanted the temperature in a cold storage room, office, grain bin or other place, the chances were you took a mercury-in-glass thermometer and went out and got it. Or, if there were several such places, a separate thermometer was located at each one; and every so often somebody would make the rounds and read the temperatures.

In its time this practice was satisfactory. Under certain conditions it still is today. But in accuracy and convenience, it cannot be compared

with the new Bristol's Electric Indicating Thermometer.

Accessibly installed at a central headquarters, it indicates the temperatures at any number of distant points. It does so with a precision conforming to the highest standards of accuracy. The measuring elements or resistance bulbs are interchangeable. If one is accidentally destroyed, it can quickly and inexpensively be replaced by another. Standardization at proper intervals keeps accuracy permanently constant. Information on request.



Sensitive and accurate over the entire range from -40°F to 300°F, Bristol's Electric Indicating Thermometer consists of (1) as many resistance bulbs as there are locations where temperatures are to be taken, (2) a multiple point rotary switch for connecting into instrument circuit any one of the several bulbs, (3) the indicating instrument with extra wide temperature scale, (4) a modified form of Wheatstone bridge having four resistance arms (two of which are equal, a third which is equal to the resistance of the bulb at the highest scale temperature, and a fourth arm which is equal to the resistance of the bulb at the lowest scale temperature), together with (5) a battery, (6) standardizing rheostat, and (7) a double throw switch for substituting the bulb for the fourth bridge resistance arm.

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Branch Offices: Airen · Birmingham · Beston · Chicago · Denver · Detroit · Los Angeles · New York · Philadelphia Pittsburgh · St. Louis · San Francisco · Canada: The Bristol Company of Canada, Ltd., Torento, Ontario. England: Bristol's Instrument Co., Limited, London, S.E. 14

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PIONEERS IN PROCESS CONTROL SINCE 1889

# THE STARTING POINT of



# FORGINGS CARBON-ALLOY AND SPECIAL BASIC ELECTRIC

STEELS



COMPLETE control of all processing from selection of the melting charge to the finished condition is the N. F. & O. guarantee of quality in forgings furnished to your specifications—Smooth Forged, Hollow Bored, Rough or Finish Machined.

#### NATIONAL FORGE AND ORDNANCE CO.

IRVINE, WARREN COUNTY, PENNA., U. S. A.

sion gage blocks (Schedule 5025), for Washington Navy Yard; chain hoists (Schedule 4937), about 400 drill chucks (Schedule 4937), 2436 hack-saw frames (Schedule 4943), indicators and recorders and spare parts (Schedule 4959); until May 17, 15 universal, adjustable tool heads (Schedule 5051), motor-driven pumps and spare parts (Schedule 4955), miter box. rip, keyhole, band and cross-cut saws, and miter boxes (Schedule 5005) for Eastern and Western yards; until May 17, 54,000 ft. of 5/16-in. galvanized steel wire rope (Schedule 5036) for station at Yorktown, Va.

Purchasing and Contracting Officer, Holabird Quartermaster Depot, Baltimore, asks bids until May 20 for 10 oil pumps, five transmission grease pumps, 250 gasoline and oil steel drums, etc. (Circular 131).

#### **♦ MIDDLE WEST** ▶

United States Engineer Office, Rock Island, Ill., asks bids until May 27 for eight auxiliary automatic mechanical brakes (Circular 220).

Walgreen Co., 744 Bowen Avenue, Chicago, manufacturer of drug and chemical products, has let general contract to E. W. Sproul Construction Co., 2001 West Pershing Road, for three-story storage and distributing plant, 140 x 200 ft. Cost about \$250,000 with equipment. A. Epstein, 2001 West Pershing Road, is architect.

United States Engineer Office, Commerce Building, St. Paul, Minn., asks bids until May 17 for power and control equipment for lock and dam No. 6, Mississippi River, near Trempealeau, Wis., including transformers, regulators, switches, remote control switch cabinets, power feeders, switchboard, etc.

Firestone Tire & Rubber Co., Akron, Ohio, will soon begin superstructure for new one-story factory branch, service and distributing plant, 134 x 173 ft., at Chicago, for which general contract recently was let to Campbell, Lowrie & Lautermilch, 400 West Madison Street, Chicago. Cost about \$70,000 with equipment.

Cudahy Packing Co., Union Stock Yards, Chicago, and Thirty-third and O streets, Omaha, Neb., meat packer, has approved plans for extensions and improvements in oleo and edible oil refinery at last noted address. Cost about \$150,000 with equipment.

Town Council, Interior, S. D., G. H. Dunham, town clerk, asks bids until May 13 for pumping machinery and auxiliary equipment, pipe lines, etc., for municipal water system.

Quartermaster Depot, 1819 West Pershing Road, Chicago, asks bids until May 27 for 120 crowbars, 180 machinists' hammers, 308 saws, 720 carpenters' claw hammers, etc. (Circular 249).

Aetna Machine Works, Inc., 4650 Aetna Street, Chicago, has been organized by Louis J. and Fred M. Brainard, to manufacture machinery and tools, and operate a general machine works.

Chicago, St. Paul, Minneapolis & Omaha Railroad, 275 East Fourth Street, St. Paul, Minn., is planning immediate reconstruction of Itasca roundhouse at Superior, Wis., burned recently.

Headly Engraving Works, 4376 Ogden Avenue, Chicago, general engraver of molds, steel, brass, etc., marking dies, has let general contract to C. W. Marik Construction Co., for a one-story addition, 50 x 125 ft.

#### **♦ SOUTH CENTRAL** ▶

Dowling Brothers Distilling Co., Burgin, Ky., has plans for new distillery, with power house and machine shop. Cost over \$80,000 with equipment. Bids will be asked soon on general contract. Carl J. Kiefer, Schmidt Building, Cincinnati, is consulting engineer.

New Orleans Alcohol Distilling Corpn., Maritime Building, New Orleans, affiliated with Louisiana Dairy Products Corpn., same address, has taken over property of Louisiana State Rice Mill, Chartres and Montagut streets, and will remodel for production of alcohol. Cost over \$75,000 with machinery. William J. Englert is secretary and treasurer.

Director of Purchases, Tennessee Valley Authority, Knoxville, Tenn., asks bids until May 21 for fabricating, galvanizing and delivering 37 double circuit steel transmission towers and accessories for Wilson Dam-Picking Landing Dam transmission line: until May 27 for gate hoists and hoisting mechanisms for radial gates and trashway gates for Wheeler Dam.

City Council, Lexington, Ky., Paul Morton, Municipal Building, city manager, haplans for hangar at municipal airport, with shop and reconditioning facilities. 60 x 80 ft. William B. Brock, First National Bank Building, is architect.

Bernheim Distilling Co., 1701 West Breckinridge Street, Louisville, has plans for eight-story addition for storage and distribution. Cost close to \$100,000 with equipment. Leslie V. Abbott, 8 Kenwood Village. Louisville, is architect.

Coca Cola Bottling Co., Tuscaloosa, Ala., has let general contract to J. O. Holloman, Tuscaloosa, for one-story bottling works. Cost \$40,000 with machinery.

#### **♦ WESTERN PA. DIST.** ▶

Pittsburgh Steel Drum Co., Oliver Building, Pittsburgh, manufacturer of steel barrels, drums, etc., has taken over property at East Butler, Pa., for new plant at that location, removing present works from Apollo, Pa.

Superintendent of Industries, Federal Prison, Lewisburg, Pa., asks bids until May 13 for three motor-driven grinders and buffers (Schedule 46).

American Oil Co., Grant Building, Pittsburgh, has taken over about 10 acres at Beck's Run, near Hays, Pa., on Monongahela River, for new bulk oil storage and distributing plant, including warehouse and storage units, automobile service and garage building and other structures. A steel tank car loading rack will be built; steel tanks with capacity of over 900,000 gal. will be installed. Cost about \$350,000 with equipment, Headquarters of company are in American Building, Baltimore.

United States Engineer Office, Pittsburgh, asks bids until May 15 for two butterfly valves for reservoir dam on Tygart River, W. Va. (Circular 358); until May 27, two 48-in. needle valves, same location (Circular 357).

#### **■ MICHIGAN DISTRICT**

Electro Tool, Inc., Grand Rapids, Mich., recently organized by Walter M. Hanson, 921 Knapp Street, N. E., and associates, has leased space in building at 1140 Monroe Avenue, for manufacture of electrical and machanical tools and appliances. Mr. Hanson will be secretary; Ernest Andis is president and treasurer.

Bay City Electric Steel Castings Co., Bay City. Mich., has been acquired by E. M. Mills, heretofore secretary and treasurer of company. Mr. Mills will be president of new organization and Wesley Creeley, an official of Simons Iron & Steel Co., Lansing, Mich., vice-president.

Michigan Brewing Co., Grand Rapids, Mich., recently organized, has approved plans for extensions and improvements in former Grand Rapids Brewery, acquired for local plant. New buildings will be erected and new equipment installed. Cost over \$250,000 with machinery.

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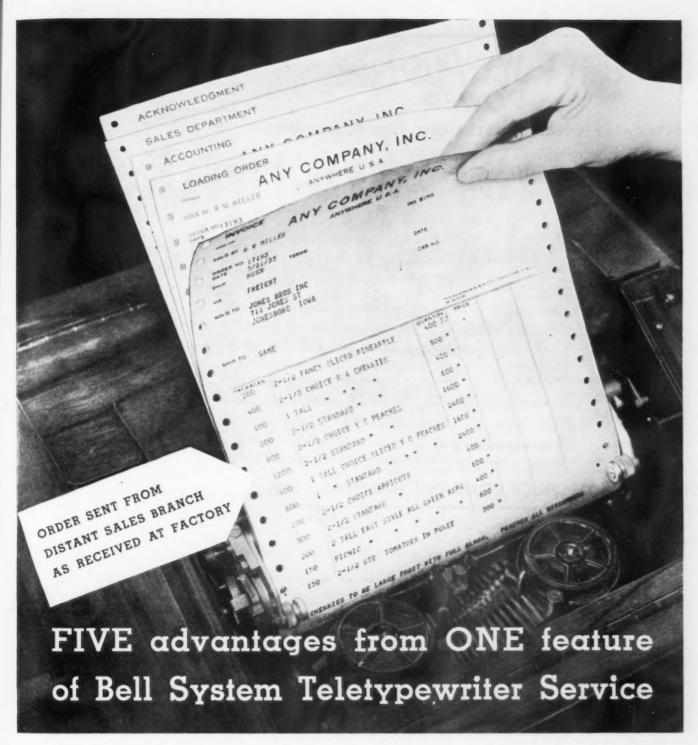
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A-B Stoves, Inc., Twenty-fourth Street. Battle Creek, Mich., has been organized by Gordon E. Townsend, 1603 Central National Tower, and associates, to manufacture stoves, parts, etc.

#### **♦** SOUTHWEST ▶

Board of Education, Library Building. Kansas City, Kan., plans manual training department in new three story and basement high school, 372 x 655 ft., at Twenty-second Street and Minnesota Avenue, for which bids are being asked on general contract until June 4. Cost about \$1,909.000. Hamilton, Fellows & Nedved, North Tower Court, Chicago, are architects:



THOROUGHLY tested by many companies is the "form-writing" feature of Bell System Teletypewriter Service—typing by wire. A device synchronizes the position of continuous forms or pages on both sending and receiving machines. This makes possible the simultaneous typing of orders and invoices—between adjacent buildings or distant branches

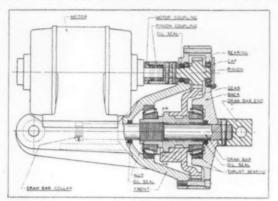
—with several identical typewritten copies at each end.... And with these results:

- 1. Saves time.
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- 5. Permits more efficient production control of widely separated factories and offices.

In addition to "form-writing," Teletypewriter Service provides quick, written communication for all administrative matters—credit information, price changes, shipping reports, etc. Your local Bell Company will be glad to show you how it can best be adapted to your business. No obligation, of course. Just call the nearest office.

# POWER PULL-PUSH XXXXX

#### ELECTRICALLY OPERATED STRAIGHT LINE POWER UNIT



#### DESCRIPTION:

The power load is carried at equal speed in either direction.

The time cycle is based on a 4" stroke in one

second.

Lifting power 160 to 2300 lbs.
Impelling force 3000 to 35,000 lbs.
All moving parts in oil bath.
Cost of current practically nothing.
Standard housing can be of base, clevis, or flanged type.

#### **PURPOSES:**

Vises, Clamping Fixtures, Arbor Presses, and

cks.
Power Clamps for shears and welding machines.
The moulding presses of plastic materials such bakelite, rubber, clay, etc.
Die casting machines—for die movement and awing cores.
Industrial doors—to open and close.
Many other purposes.

#### ASK FOR BULLETIN No. 127

Other Products: Hand Operated Lathe Chucks-Catalogue 48. Power Chucks-Bulletin 120G. Power Wrenches-Bulletin 138.

#### THE CUSHMAN CHUCK COMPANY, HARTFORD, CONN.

Joseph W. Radotinsky, Commercial Bank Building, Kansas City, Kan., is associate architect.

Board of Public Works, Kansas City, Mo., H. F. McElroy, city manager, plans installation of loading and unloading equipment at State Line wharf on waterfront, including conveying, elevating and other mechanical-handling equipment, with traveling crane. Cost about \$75,000.

Union Sign Mfg. Co., Inc., Kansas City, Mo., has been organized by Joseph Schulz, 900 East Twenty-eighth Street, and asso-ciates, to manufacture electric signs and displays.

Western States Grocery Co., Vernon, Los Angeles, has engaged Joseph R. Koberling, 569 South Peoria Street, architect, and W. R. Roads, Commercial Building, consulting engineer, both Tulsa, Okla. to prepare plans for two-unit factory branch, storage and distributing plant at Tulsa. Cost about \$400,000 with mechanical-handling and other equipment. Tulsa offices of company are at 7 North Detroit Avenue; S. M. Bowers is district manager.

City Council, Liberty, Tex., will soon take bids for three 150-kw. generators. Diesel engine units and complete accessories, switchboard, transformers, etc., with electrical distribution system, cables and wires, meters and service facilities for new municipal electric light and power plant. Fund of \$95,200 has been secured through Federal aid. Garrett Engineering Co., 300 Hughes Street, Dallas, Tex., is consulting engineer.

Common Council, Artesian Gardens, Tex. (P. O. San Antonio), asks bids until May 13 for pumping machinery and acces-sories, 50,000-gal. capacity elevated steel tank and tower, pipe lines, etc., for mu-nicipal waterworks. Terrell-Bartlett, Inc.,

Smith-Young Tower, San Antonio, is con-sulting engineer.

#### **■ BUFFALO DISTRICT**

Curtice Brothers Co., Rochester, N. Y., manufacturer of food products, has let general contract to Spitz Werner Construction Co., 11 Comfort Street, for one-story and basement factory branch, storage and distributing plant, 75 x 200 ft., at Leicester, N. Y. Cost about \$40,000 with equipment.

Board of Education, Jamestown, N. Y., plans manual training department in new multi-story senior high school. Fund of \$1,330,000 has been secured through Federal aid for structure and equipment; also for new one-story industrial building and three additions to junior high schools.

Victor Insulators, Inc., Victor, N. Y., has been organized by Kent A. Hawley, Victor, and Arthur G. Benard, 225 Mount Vernon Avenue, Rochester, N. Y., to manufacture safety electrical appliances and equipment, capital \$250,000.

#### ◆ PACIFIC COAST ▶

Water and Power Bureau, 207 South Broadway, Los Angeles, D. P. Nicklin, purchasing agent, asks bids until May 13 for 111,125 ft. electric cable for power line (Specification 1662), 90,000 lb. black copper rods (Specification 1659), strain clamps, cable loop clamps, etc. (Specifica-tion 1663).

Pacific Can Co., 290 Division Street, San Francisco, manufacturer of cans and con-tainers, has approved plans for one-story plant addition, 111 x 250 ft. Cost about

\$70,000 with equipment. Ellison & Russell. Pacific Building, are consulting engineers.

Bureau of Supplies and Accounts, Navy Department, Washington, asks bids until May 14 for 20 pneumatic grinders for Mare Island Navy Yard, three pneumatic drills and 18 pneumatic chipping hammers for Puget Sound yard, and 216 pneumatic hammers for Puget Sound and San Diego yards (Schedule 4946); one radial grinder (Schedule 4947) for Puget Sound yard; until May 17, one motor-driven bench precision lathe (Schedule 4998); until May 21, 20,000 fuse hole plugs for 75-mm. projectiles (Schedule 4997); until May 24, 1500 lb. steel welding electrodes (Schedule 1500 lb. steel welding electrodes (Schedule 5040), all for Mare Island yard.

City Council, Oceanside, Cal., plans new municipal electric light and power plant. Fund of \$375,000 is being arranged through Federal aid. E. T. Duehren is superin-tendent of public works in charge.

Associated Oil Co., 79 New Montgomer Street, San Francisco, has plans for additions to refinery at Avon, Cal., includin new lubricating oil-manufacturing uni Cost about \$100,000 with equipment.

Southern Utah Power Co., Cedar City. Utah, plans power transmission line in Iron Mountain district, about 12 miles. Cost about \$30,000 with equipment.

United States Engineer Office, Portland, asks bids until May 24 for two 43,200-kw. generator units with auxiliary equipment and spare parts (Circular 603).

Bureau of Reclamation, Denver, asks bids until May 17 for platforms, ladders, railings, doors, etc., for installation in tunnel plug outlet works, Boulder Dam power plant.

#### **♦ FOREIGN**

Electricity Supply Commission, Upington, South Africa, plans new steam-operated electric power plant, and will soon purchase equipment, including two 100-kw. generator sets, boilers, stokers and auxiliaries. Cost over \$125,000 with machinowy.

Austin Motor Co., Ltd., Birmingham, England, has authorized expansion and im-provements to cost about \$250,000, in-cluding additional equipment.

Consolidated Textile Mills, Ltd., Durban. South Africa, has plans for several new units, for increase in present output. Cost over \$400,000 with machinery.

Consolidated Mining & Smelting Co. of Canada, Ltd., 1010 St. Catherines Street, Montreal, has authorized plans for new works for production of sulphuric acid and allied products at Trail, B. C. Cost over \$2,000,000 with machinery.

New apparatus to detect weak points in large structures such as mine supports and dams and record the danger spots on film, has been invented by Prof. Philip B. Bucky of the Columbia University School of Mines. The invention, developed through research sponsored by the Engineering Foundation, shows where breaks may occur, and where reinforcements of materials are needed to assure safety. It combines the centrifuge and the photo-elastic apparatus. A model of the structure to be tested is placed in the centrifuge and whirled. As the machine revolves, centrifugal force stresses the model as gravity would stress its prototype in a dam or other structure. Motion pictures of the model behavior are taken as the centrifuge whirls.

# LERROCOLUMBIUM is available...

Electro Metallurgical Company is now prepared to supply Ferrocolumbium for the production of 18-8 (18 per cent chromium, 8 per cent nickel) stainless steel. Advantages to be derived from the use of columbium are:

- 1. It minimizes susceptibility to intergranular corrosion.
- 2. It makes possible the use of 18-8 in temperature range between 1000° F. and 1500° F. without developing intergranular corrosion.
- 3. Columbium does not burn out during welding by either oxyacetylene or electric method.
- 4. Columbium treated 18-8 stainless steel can be used in welded condition without necessity of subsequent annealing.
- **5.** Columbium does not impair corrosion resistance of 18-8 stainless steel.

Ferrocolumbium is a product of Electro Metallurgical Company. Our Metallurgists will gladly explain its uses and advantages.



ELECTRO METALLURGICAL COMPANY

Unit of Union Carbide and Carbon Corporation

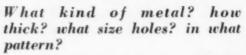
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CARBIDE and CARBON BUILDING 30 EAST 42nd STREET . NEW YORK, N. Y.

COLUMBIUM treated 18-8 stainless steel can be procured in commercial forms including welding rod. Write us for information. Electromet Ferro-Alloys & Metals

#### WHAT MUST IT DO?



The correct answers spell the difference between perforated metal sold as merchandise and that planned the Wickwire Spencer way. The results . . . the metal does better work and has longer life.

Our engineers are at your service, free. Let us know the use, we will make recommendations based upon scientific study. It costs no more to buy Perforated Metal in this way.

Wickwire Spencer Steel Company, 37 East 42nd Street, New York City; Buffalo, Chicago, Detroit, Philadelphia, Tulsa, Worcester; Pacific Coast Headquarters: San Francisco; Warehouses: Los Angeles, Seattle, Portland. Export Sales Department: New York City.

### WICKWIRE SPENCER perforated metals

## Porcelain-Enameled Tile Made On Mass Production Basis

(CONTINUED FROM PAGE 13)

10-ft. lengths. They are made in various sizes, the width of the stock depending on the size of the tile. They are finished in white enamel and various colors.

The stock is stamped into shape with a flange about 3/16 in, deep around the four edges. The tile is applied on insulating board scored both horizontally and vertically about 3/16 in. deep. The flanges on the tile fit into the grooves scored in the board and the tile is cemented to the foundation material. A special grouting cement is used to point up the joints between the tiles.

The tiles are blanked and formed in one operation on two presses, each having a capacity of 7500 pieces per hr. From the presses they are loaded into baskets in which a chain hoist carries them to cleaning and pickling tanks. In one tank they are given a nickel dip. Here a thin film of nickel is deposited on the metal, which aids in the adhesion of the ground coat. On leaving the pickling

tanks, the tile is carried through a drying oven for removing the moisture.

## Ingenious Spacing and Loading Device

After drying, the tile is loaded by hand upside down on an ingenious spacing and loading device about 3 ft. wide, the same width as the conveyor. This feeds the tiles on to the conveyor, after which they are not touched by hand until they are packed. On the spacing and feeding device the tiles are spaced about 1/4 in. apart on all sides and are arranged in rows about seven to a row, depending on the size of the tile. Spacing and loading devices are provided for different widths of tile, and when tile of a different width is to be made, the loading device is removed and another substituted.

When the tiles are set on the loading device they move forward about 3 ft. and automatically stop, and when an entire row is filled, the tile in that row is released by

cam-operated triggers. Then the tile moves a short distance, passing from a cable conveyor on to one composed of fine wire. This section of the conveyor carries the tile under an automatic spray gun. which travels back and forth at right angles to the conveyor and sprays the ground coat. Beyond the spray gun is a row of spiders, which turn the tile over, after which it is carried under another spray gun for coating the face side. Then the tile moves on to a wire conveyor on which it passes through a gas-fired dryer 30 ft. in length in which the work is dried at 200 deg. F., to remove the moisture from the wet enamel. After drying, the tile is transferred to a Nichrome chain conveyor, which carries it through an electric burning furnace for burning the ground coat

#### Produce Pastel Effect

After burning, the work moves along the conveyor a short distance, during which it is cooled, and then under an automatic spray gun which applies the cover coat on the face of the tile. On the wet cover coat another automatic spray gun applies a light coat of slightly darker tint. This is applied unevenly and results in a pastel coat or a slight variation in the shading of the tile, thereby producing a pleasing color effect.

After the second spraying of the cover coat, the tile passes through another dryer and a second burning furnace. Then it moves on to a cooling rack and from that to a rubber packing belt. As the tiles move along this belt, they are fed off to packing stations on either side where they are packed in cartons and then go to finished stock storage.

#### TRADE NOTES

Pittsburgh Piping & Equipment Co., Pittsburgh, has removed its New York offices to the Woolworth Building, 238 Broadway.

Wackman Welded Ware Co., St. Louis, has completed negotiations for acquisition of the H. H. Ward steel drum plant at Chester, Pa. Alterations and enlargement of the plant will begin immediately and production should start about June 15.

The Koppers Construction Co., Pittsburgh, moved its New York office to the Stone & Webster Building, 90 Broad Street, effective May 1.





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Exide

WITH EXIDE MIPOR SEPARATORS

"MIPOR," Reg. U. S. Pat. Off



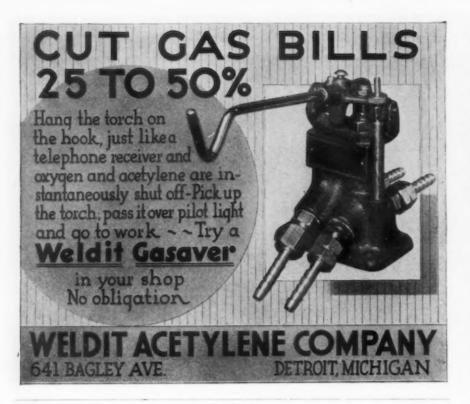
SIGNIFICANT savings are possible in handling materials. First, of course, is the selection of electric industrial trucks of the type suited to the particular requirements of your plant. Equally important is the battery that is the sole source of power in the truck.

Exide-Ironclad Batteries have proved their economy in materials handling service in every industry. They have the sustained voltage and reserve power to get things done. They maintain good speeds with heavy loads and on steep grades. And they insure uninterrupted service throughout a working shift.

Exide-Ironclads are economical at the charging panel. They cut maintenance costs to a minimum. Their long life and trouble-free service add further to materials handling economy.

At no increase in price, Exide-Ironclads are now equipped with the new Exide Mipor Separator—the permanent storage battery plate insulator that is immune to electrolyte, heat and vibration under every operating condition. Let Exide-Ironclads improve your materials handling service and cut costs. Write for booklet, "Facts for Consideration in Selecting a Battery."

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## Automobile Rear Axle Parts Require Accurate Grinding

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plant, has proved very satisfactory.

Great progress has been made in the manufacture of bevel drive gears for automotive axles, so that the noisy gears of other days have been replaced by spiral bevel gears of special design. Production of such gears is a story in itself, but it has been found that a final abrasive action to seat each gear and pinion individually is productive of efficient results. Both the gear and pinion are heat treated, and the lapping of the gears and their pinions not only provides smooth finish of tooth surfaces, but corrects slight irregularities due to heat treatment as well. Fig. 8 shows a 13-in, outside diameter ring gear mounted with its pinion for lapping in a Gleason gear lapping machine. The lapping medium is No. FFRA carborundum, which is fed directly with a mixture of light oil to the gears as the large gear rotates at a speed of 210 r.p.m. This is not a lengthy process, as from 1/2 to 1 min. usually is sufficient. In the lapping operation the gears are entirely in-

Some years ago had an engineer advocated a lapping operation with an abrasive on the work in question the process would not have been accepted readily, because it was thought that the abrasive material would charge and consequently ruin the finished surfaces. However, research has proved that the hardened surfaces in question are not charged with abrasive inasmuch as gears fitted in this manner have been run for hundreds of thousands of miles in actual truck operation without showing signs of any but ordinary wear. It is understood, of course, that both gear and pinion are cleaned very thoroughly of all abrasive and oil after the lapping operation.

#### This Week on The Assembly Line

(CONTINUED FROM PAGE 51)

in April for an all-time record and no slackening of pace is yet discernible for May. Retail deliveries during the week of April 27 were 18,265 units, highest in the corporation's history. Dodge made 6845 commercial cars and trucks in April and at the same time received 8900 orders. It is rushing to completion within 60 days the addition to its truck plant.

Although steel and parts releases have been light, pointing to a paring of inventories, Ford still is building around 6400 units a day, six days a week, at the Rouge plant. It is understood that Ford shortly will go back to five days a week. Equipment orders for Ford's foreign plants have not yet been placed.

#### Pontiac to Expand

General Motors has appropriated \$2,500,000 for enlargement of the Fisher Body plant at Pontiac to make possible the building of 1200 to 1300 Pontiac bodies a day. Expansion will include not only the general manufacture and assembly of bodies, but also the sheet metal department. Pontiac will spend \$1,000,000, its outlay probably being partly for the tooling up of a second motor line as well as of other production lines in its plant. At present Pontiac has only one motor line in operation.

April shipments by Hudson amounted to 11,500 cars, raising its total assemblies of 1935 models to about 47,000 units. In the same period retail sales aggregated 25,800 cars, not including foreign orders. Hudson now has 2956 dealers, the largest number since 1930. During the first quarter it made 37.3 per cent of all the cars manufactured by independent companies.

Both Hudson and Nash the past winter attempted what the industry as a whole will do next winter: that is, to build parts ahead and store them in anticipation of future assemblies. Hudson, through what it calls its "output control plan," reports that it employed an average of 10,000 men monthly during the winter months of 1934-35, as against a low point of 3000 men and a peak of 15,000 the previous winter. Nash, in making major parts in advance, distrib-uted workers' incomes more evenly through the year and also eliminated the necessity of emergency workers during the spring. It estimates that half of its workers were helped in this manner, the other half being engaged in actual assembly of bodies and cars and therefore being unavoidably subject to seasonal trends.

Two General Motors divisions are reported to be planning to clean up the manufacture of current models by Aug. 31. September will be devoted to tooling up for next year's cars and production will get under way in October.